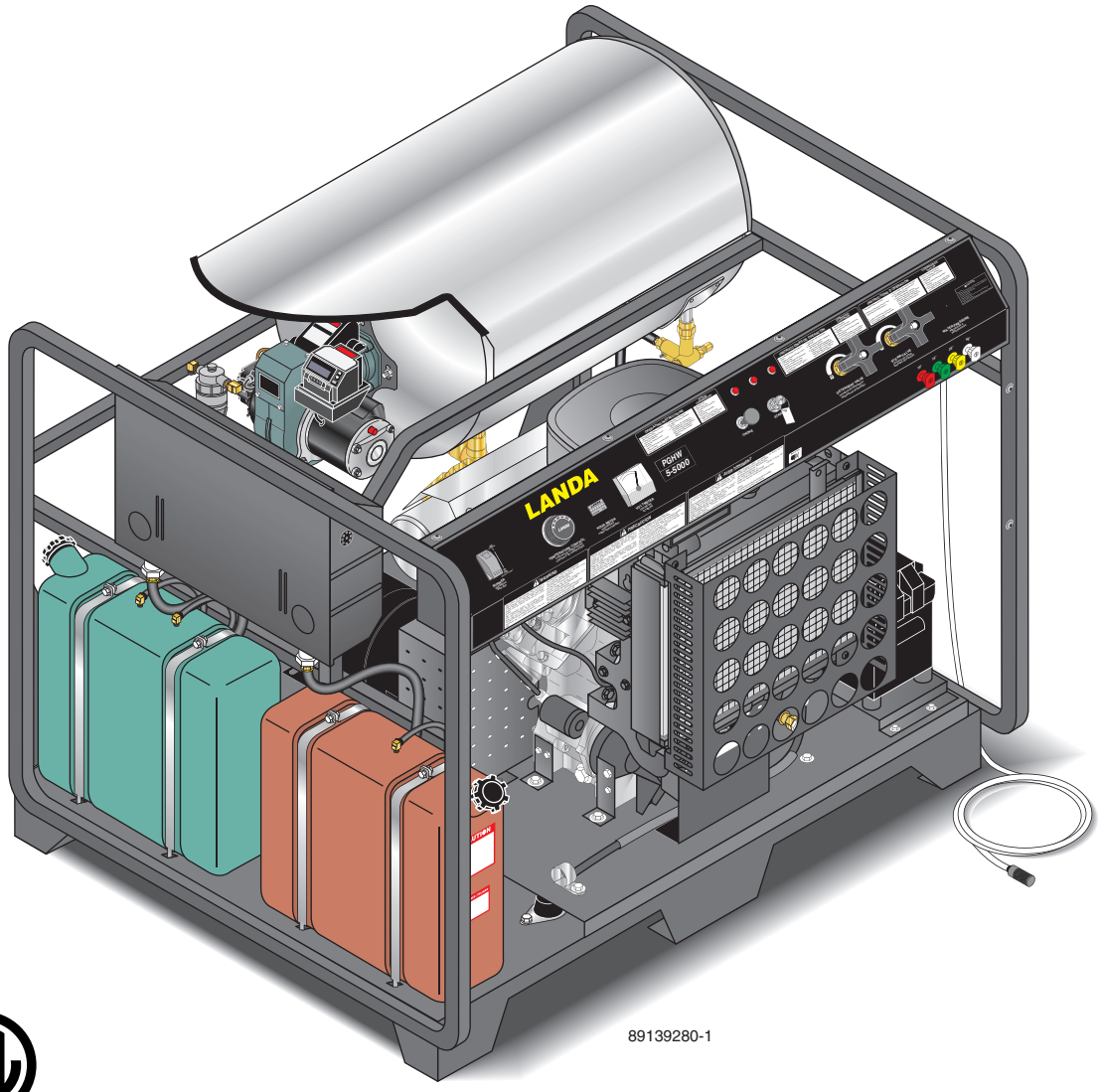
LANDA® PGHW

OPERATOR'S MANUAL

■ **PGHW5-5000** 1.110-512.0



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For technical assistance or the dealer nearest you,
consult our web page at **www.landa.com**

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Model Number _____

Serial Number _____

Date of Purchase _____

The model and serial numbers will be found on a decal attached to the pressure washer. You should record both serial number and date of purchase and keep in a safe place for future reference.

INTRODUCTION & IMPORTANT SAFETY INFORMATION

Thank you for purchasing this Pressure Washer.

We reserve the right to make changes at any time without incurring any obligation.

Owner/User Responsibility:

The owner and/or user must have an understanding of the manufacturer's operating instructions and warnings before using this pressure washer. Warning information should be emphasized and understood. If the operator is not fluent in English, the manufacturer's instructions and warnings shall be read to and discussed with the operator in the operator's native language by the purchaser/owner, making sure that the operator comprehends its contents.

Owner and/or user must study and maintain for future reference the manufacturers' instructions.

The operator must know how to stop the machine quickly and understand the operation of all controls. Never permit anyone to operate the engine without proper instructions.

SAVE THESE INSTRUCTIONS

This manual should be considered a permanent part of the machine and should remain with it if machine is resold.

When ordering parts, please specify model and serial number. Use only identical replacement parts.

This machine is to be used only by trained operators.

IMPORTANT SAFETY INFORMATION

WARNING

READ OPERATOR'S MANUAL THOROUGHLY PRIOR TO USE.

WARNING: To reduce the risk of injury, read operating instructions carefully before using.

1. Read the owner's manual thoroughly. Failure to follow instructions could cause malfunction of the machine and result in death, serious bodily injury and/or property damage.
2. Know how to stop the machine and bleed pressure quickly. Be thoroughly familiar with the controls.
3. Stay alert — watch what you are doing.

WARNING

KEEP WATER SPRAY AWAY FROM ELECTRICAL WIRING.

WARNING: Keep wand, hose, and water spray away from electric wiring or fatal electric shock may result.

4. All installations must comply with local codes. Contact your electrician, plumber, utility company or the selling distributor for specific details.

WARNING

EAR PROTECTION MUST BE WORN

WARNING: This machine exceeds 85 db appropriate ear protection must be worn.

WARNING

USE PROTECTIVE EYE WEAR AND CLOTHING WHEN OPERATING THIS EQUIPMENT.

WARNING: High pressure spray can cause paint chips or other particles to become airborne and fly at high speeds. To avoid personal injury, eye, hand and foot safety devices must be worn.

5. Eye, hand, and foot protection must be worn when using this equipment.
6. Keep operating area clear of all persons.

WARNING

RISK OF EXPLOSION: OPERATE ONLY WHERE OPEN FLAME OR TORCH IS PERMITTED

WARNING: Flammable liquids can create fumes which can ignite, causing property damage or severe injury.

WARNING: Risk of explosion — Operate only where open flame or torch is permitted.

WARNING

RISK OF FIRE. DO NOT ADD FUEL WHEN OPERATING MACHINE.

WARNING: Risk of fire — Do not add fuel when the product is operating or still hot.

WARNING: Do not use gasoline crankcase draining or oil containing gasoline, solvents or alcohol. Doing so will result in fire and/or explosion.

WARNING: Risk of fire — Do not Spray flammable liquids.

7. Allow engine to cool for 1-2 minutes before refueling. If any fuel is spilled, make sure the area is dry before testing the spark plug or starting the engine. (Fire and/or explosion may occur if this is not done.)

   Gasoline engines on mobile or portable equipment shall be refueled:

   a. outdoors;
   b. with the engine on the equipment stopped;
   c. with no source of ignition within 10 feet of the dispensing point; and
   d. with an allowance made for expansion of the fuel should the equipment be exposed to a higher ambient temperature.

In an overfilling situation, additional precautions are necessary to ensure that the situation is handled in a safe manner.

WARNING: Risk of injury. Disconnect battery ground terminal before servicing.

8. When in use , do not place machine near flammable objects as the engine is hot.
9. Oil burning appliances shall be installed only in locations where combustible dusts and flammable gases or vapors are not present. Do not store or use gasoline near this machine.
10. Use No. 1 or No. 2 heating oil (ASTM D306) only. **NEVER** use gasoline in your fuel oil tank. Gasoline is more combustible than fuel oil and could result in a serious explosion. **NEVER** use crankcase or waste oil in your burner. Fuel unit malfunction could result from contamination.
11. Do not confuse gasoline and fuel oil tanks. Keep proper fuel in proper tank.

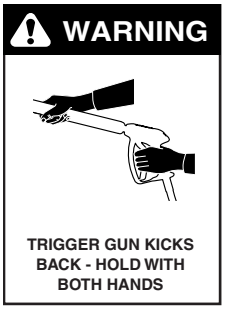
WARNING: Risk of injury. Hot surfaces can cause burns. Use only designated gripping areas of spray gun and wand. Do not place hands or feet on non-insulated areas of the pressure washer.

12. Transport/Repair with fuel tank EMPTY or with fuel shut-off valve OFF.

CAUTION: Hot discharge fluid. Do not touch or direct discharge stream at persons.

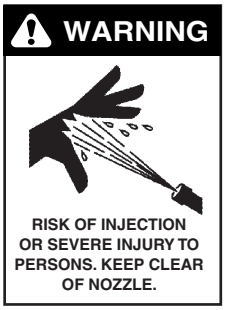
WARNING: This machine produces hot water and must have insulated components attached to protect the operator.

13. To reduce the risk of injury, close supervision is necessary when a machine is used near children. Do not allow children to operate the pressure washer. **This machine must be attended during operation.**



WARNING: Grip cleaning wand securely with both hands before starting. Failure to do this could result in injury from a whipping wand.

14. Never make adjustments on machine while in operation.
15. Be certain all quick coupler fittings are secured before using pressure washer.



WARNING: High pressure developed by these machines will cause personal injury or equipment damage. Keep clear of nozzle. Use caution when operating. Do not direct discharge stream at people, or severe injury or death will result.

WARNING: Protect machine from freezing.

16. To keep machine in best operating conditions, it is important you protect machine from freezing. Failure to protect machine from freezing could cause malfunction of the machine and result in death, serious bodily injury, and/or property damage. Follow storage instructions specified in this manual.
17. Inlet water must be clean fresh water and no hotter then 90°F.

WARNING: Risk of asphyxiation. Use this product only in a well ventilated area.

18. Avoid installing machines in small areas or near exhaust fans. Adequate oxygen is needed for combustion or dangerous carbon monoxide will result.
19. Manufacturer will not be liable for any changes made to our standard machines or any components not purchased from us.
20. The best insurance against an accident is precaution and knowledge of the machine.

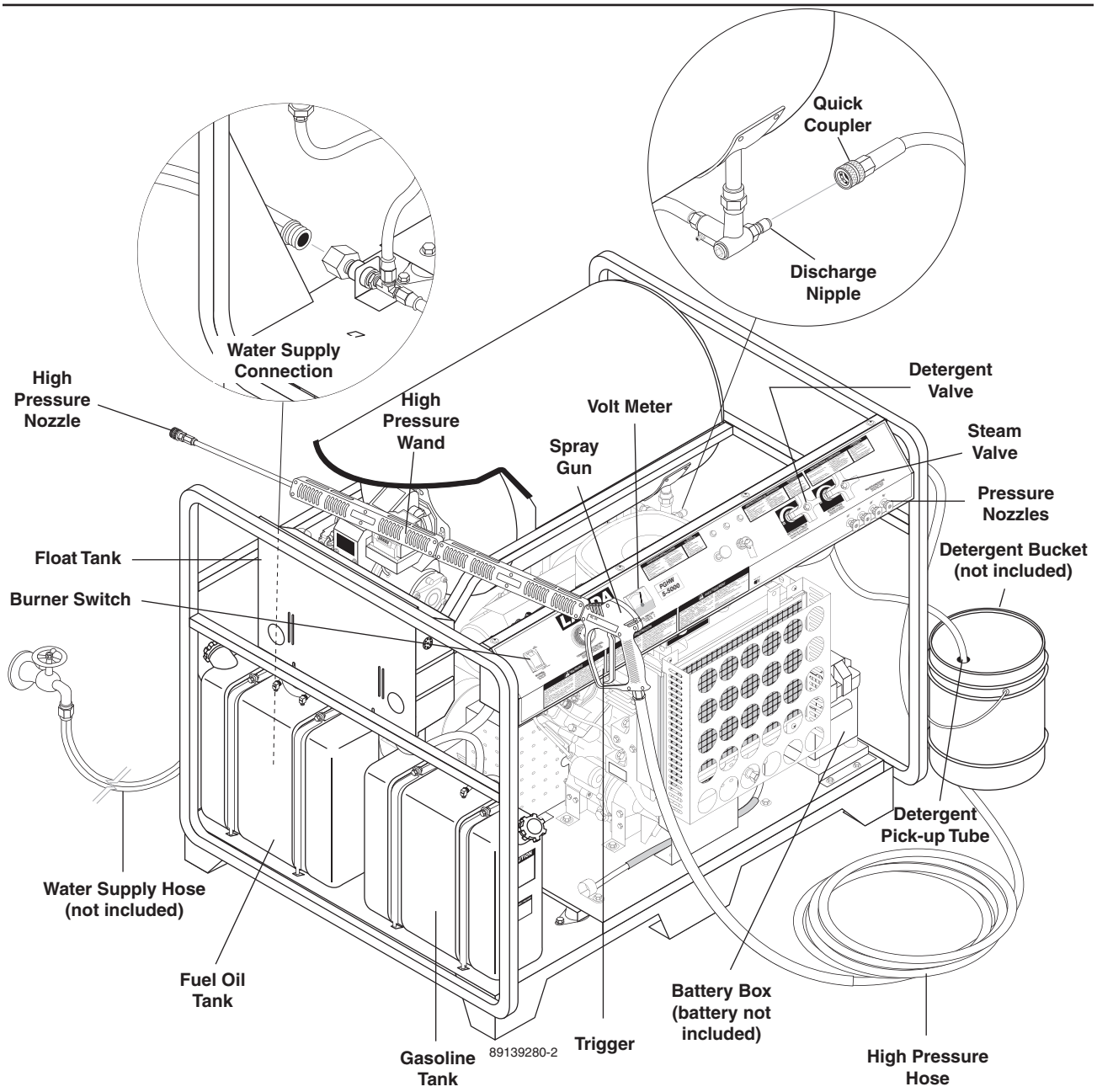
WARNING: Be extremely careful when using a ladder, scaffolding or any other relatively unstable location. The cleaning area should have adequate slopes and drainage to reduce the possibility of a fall due to slippery surfaces.

IMPORTANT SAFETY INFORMATION

21. Do not allow acids, caustic or abrasive fluids to pass through the pump.
22. Never run pump dry or leave spray gun closed longer than 1-2 minutes.
23. Machines with shut-off spray gun should not be operated with the spray gun in the off position for extensive periods of time as this may cause damage to the pump.
24. Protect discharge hose from vehicle traffic and sharp objects. Inspect condition of high pressure hose before using or bodily injury may result.
25. Before disconnecting discharge hose from water outlet, turn burner off and open spray gun to allow water to cool below 100° before stopping the machine. Then open the spray gun to relieve pressure. Failure to properly cool down or maintain the heating coil may result in a steam explosion.
26. Do not overreach or stand on unstable support. Keep good footing and balance at all times.
27. Do not operate this machine when fatigued or under the influence of alcohol, prescription medications, or drugs.
28. In oil burning models, use only kerosene, No. 1 home heating fuel, or diesel. If diesel is used, add a soot remover to every tankful.

Follow the maintenance instructions specified in the manual.

COMPONENT IDENTIFICATION



Pump — Delivers a specific gpm to the high pressure nozzle which develops pressure (Not Shown).

Spray Gun — Controls the application of water and detergent onto cleaning surface with trigger device. Includes safety latch.

Detergent Valve — Allows you to siphon and mix detergents.

Wand — Must be connected to the spray gun.

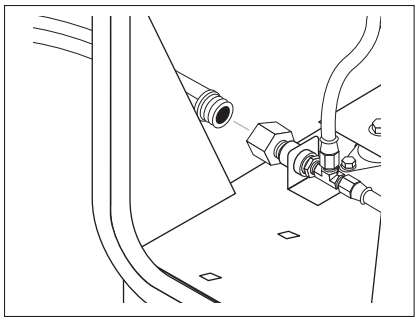
High Pressure Hose — Connect one end to water pump high pressure discharge nipple and the other end to spray gun.

Rupture Disk — Secondary pressure release in the unlikely event the unloader valve fails.

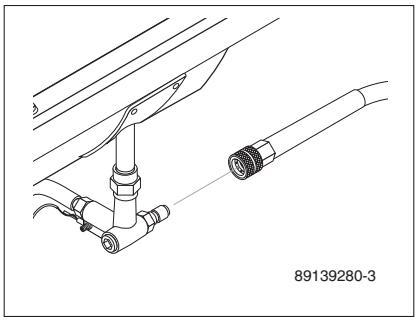
Unloader Valve — Safety device which, when the spray gun closes, prevents over pressurization (Not Shown).

NOTE: If trigger on spray gun is released for more than 2 minutes, water will leak from the pump protector. Warm water will discharge from pump protector onto floor. This system prevents internal pump damage.

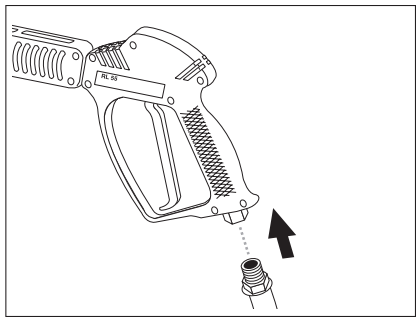
ASSEMBLY INSTRUCTIONS



STEP 1: Attach a 5/8" water supply hose to inlet connector. Minimum flow should be 6 or 10 gpm depending on model of machine.

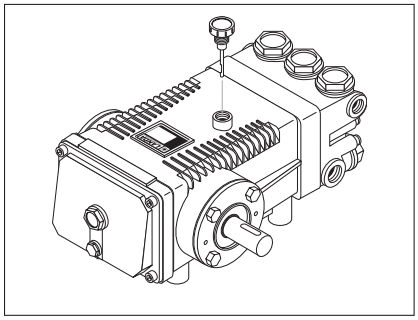


STEP 2: Attach high pressure hose to discharge nipple using quick coupler. Lock coupler securely into place by pulling back coupler collar and inserting it onto discharge nipple, then pushing collar forward to lock in place.

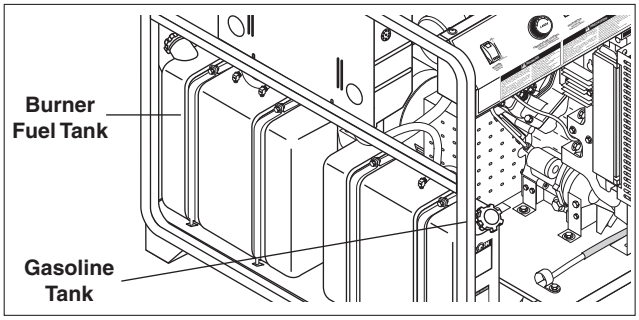


STEP 3: Attach variable pressure control wand to spray gun using teflon tape on threads to prevent leakage.

Attach swivel connector on discharge hose to spray gun using teflon tape on threads.

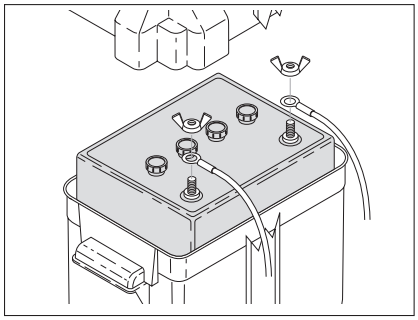


STEP 4: Check oil level on sight glass on side of pump. Oil should be visible one half way up sight glass (SAE 30W non-detergent). If sight glass is not visible, use the oil dip stick on top of the pump.



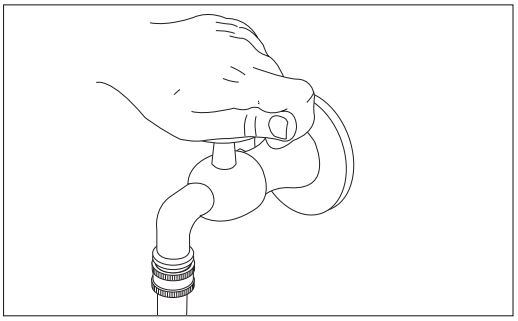
STEP 5: Fill gasoline tank and check engine oil.

Fill fuel tank. Do not confuse gasoline and fuel oil (diesel) tanks. Keep proper fuel in proper tank. (The red tank is for gasoline, and the green tank is for fuel oil.)



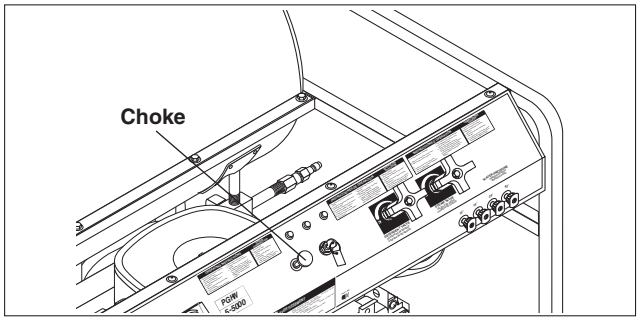
STEP 6: Install proper battery making sure that the red cable is attached to the positive terminal. Use a U1, 30 amp, 12 volt garden tractor style battery.

OPERATION INSTRUCTIONS

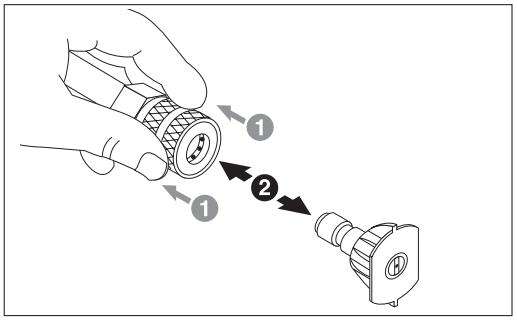


STEP 1: Read safety, installation and preventative maintenance instructions before starting machine.

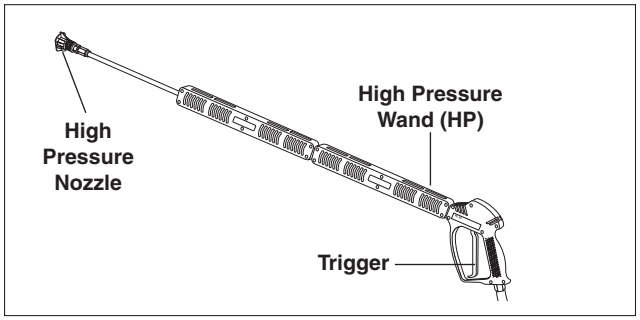
Connect the water supply hose to the float tank inlet swivel connector and turn on water supply. **NOTE:** Before installing pressure nozzle in wand coupler run machine allowing water to flush through the system until clear.



STEP 2: Read engine manual provided and pull choke. Pull spray gun trigger to relieve pressure. Then turn the engine switch to the START position and hold it there until the engine starts. **NOTE**: Do not engage the electric starter for more than five (5) seconds at a time. If the engine fails to start, release the switch, pull spray gun trigger and wait ten seconds before operating the starter again. When the engine starts, allow the engine switch to return to the ON position. Push the choke in.

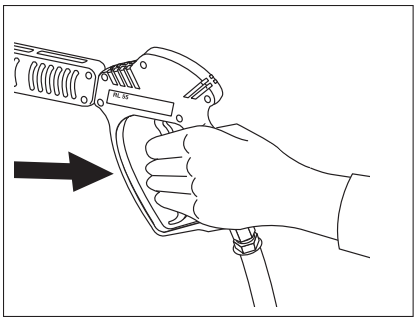


STEP 3: Pull wand coupler collar back and insert desired pressure nozzle into wand coupler. Then secure by pushing coupler collar forward. ***CAUTION: Never replace nozzles without engaging the safety latch on the spray gun trigger.***

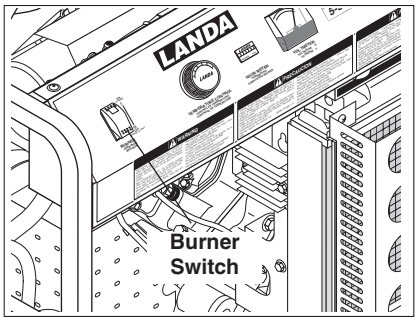


STEP 4: With spray nozzle pointed away from you or anybody else, press trigger on spray gun to obtain pressurized cold water spray.

Selection of high or low pressure is accompanied by turning the handle. **NOTE:** High pressure nozzle must be inserted at end of wand to obtain high pressure. To apply soap read operator's manual.

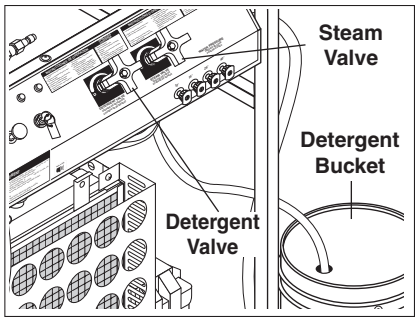


STEP 5: With the spray nozzle pointed away from you or anybody else, press the trigger on the spray gun to obtain pressurized cold water spray.



STEP 6: For hot water, turn the burner switch to ON when a steady stream of water flows out of the spray gun. Burner will now light automatically.

NOTE: Do not start machine with burner switch on.



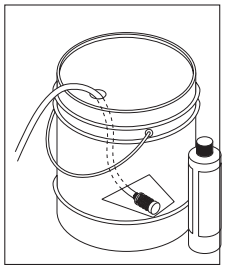
STEP 7: To apply detergent, place detergent pick-up tube into a container of detergent and turn the detergent valve counterclockwise.

For steam, open the steam valve counterclockwise. This lowers the pressure and raises the temperature.

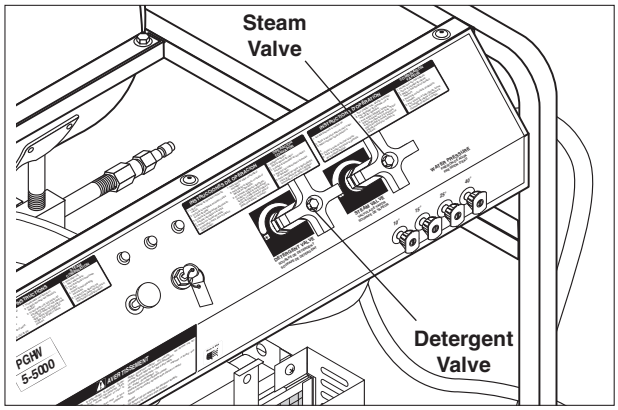
DETERGENTS & GENERAL CLEANING TECHNIQUES

⚠ WARNING

WARNING: Some detergents may be harmful if inhaled or ingested, causing severe nausea, fainting or poisoning. The harmful elements may cause property damage or severe injury.

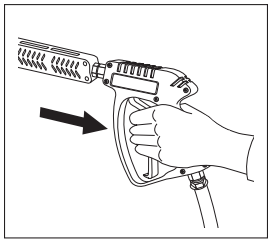


STEP 1: Use detergent designed specifically for pressure washers. Household detergents could damage the pump. Prepare detergent solution as required by the manufacturer. Fill a container with pressure washer detergent. Place the filter end of detergent suction tube into the detergent container.



STEP 2: Apply safety latch to spray gun trigger. Secure black detergent nozzle into quick coupler. **NOTE:** Detergent cannot be applied using the Yellow nozzle.

STEP 3: With the motor running, pull trigger to operate machine. Liquid detergent is drawn into the machine and mixed with water. Apply detergent to work area. Do not allow detergent to dry on surface.



IMPORTANT: You must flush the detergent injection system after each use by placing the suction tube into a bucket of clean water, then run the pressure washer in low pressure for 1-2 minutes.

THERMAL PUMP PROTECTION

If you run your pressure washer for 2-3 minutes without pressing the trigger on the spray gun, circulating water in the pump can reach high temperatures. When the water reaches this temperature, the pump protector engages and cools the pump by discharging the warm water onto the ground. This thermal device prevents internal damage to the pump.

CLEANING TIPS

Pre-rinse cleaning surface with fresh water. Place detergent suction tube directly into cleaning solution and apply to surface at low pressure (for best results, limit your work area to sections approximately 6 feet square and always apply detergent from bottom to top). Allow detergent to remain on surface 1-3 minutes. Do not allow detergent to dry on surface. If surface appears to be drying, simply wet down surface with fresh water. If needed, use brush to remove stubborn dirt. Rinse at high pressure from top to bottom in an even sweeping motion keeping the spray nozzle approximately 1 foot from cleaning surface. Use overlapping strokes as you clean and rinse any surface. For best surface cleaning action spray at a slight angle.

Recommendations:

- Before cleaning any surface, an inconspicuous area should be cleaned to test spray pattern and distance for maximum cleaning results.
- If painted surfaces are peeling or chipping, use extreme caution as pressure washer may remove the loose paint from the surface.
- Keep the spray nozzle a safe distance from the surface you plan to clean. High pressure wash a small area, then check the surface for damage. If no damage is found, continue to pressure washing.

⚠ CAUTION - Never use:

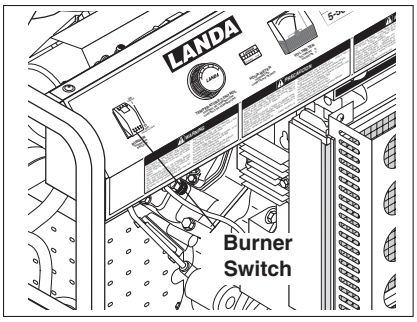
- Bleach, chlorine products and other corrosive chemicals
- Liquids containing solvents (i.e., paint thinner, gasoline, oils)
- Tri-sodium phosphate products
- Ammonia products
- Acid-based products

These chemicals will harm the machine and will damage the surface being cleaned.

RINSING

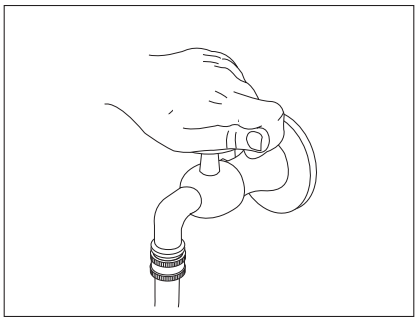
It will take a few seconds for the detergent to clear. Apply safety latch to spray gun. Remove black soap nozzle from the quick coupler. Select and install the desired high pressure nozzle. **NOTE:** You can also stop detergent from flowing by simply removing detergent siphon tube from bottle.

SHUTDOWN INSTRUCTIONS

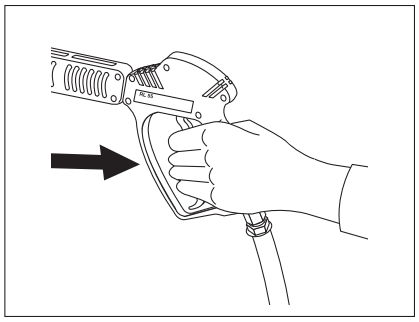


STEP 1: Rinse all detergent lines with clean water, to remove any soap residue.

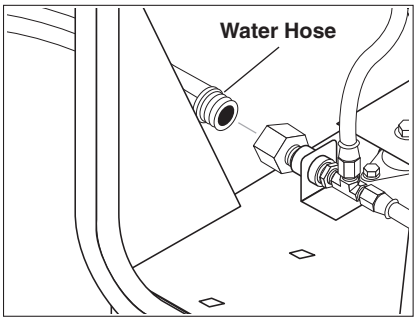
Turn burner switch off and continue spraying, allowing the water to cool to below 100°.



STEP 2: Turn engine key switch off before turning off water supply.



STEP 3: Squeeze trigger on spray gun to relieve remaining pressure.



STEP 4: Remove water supply hose.

STORAGE

CAUTION: Always store your pressure washer in a location where the temperature will not fall below 32°F (0°C). The pump in this machine is susceptible to permanent damage if frozen. FREEZE DAMAGE IS NOT COVERED BY WARRANTY.

1. Stop the pressure washer, squeeze spray gun trigger to release pressure.
2. Detach water supply hose and high pressure hose.
3. Turn on the machine for a few seconds, until remaining water exits. Turn engine off immediately.
4. Drain the gas and oil from the engine.
5. Do not allow high pressure hose to become kinked.
6. Store the machine and accessories in a room which does not reach freezing temperatures.

After Extended Storage

CAUTION: Prior to restarting, thaw out any possible ice from pressure washer hoses, spray gun or wand.

MAINTENANCE

PREVENTATIVE MAINTENANCE

- ❑ Check to see that water pump is properly lubricated.
- ❑ Follow winterizing instructions to prevent freeze damage to pump and coils.
- ❑ Always neutralize and flush detergent from system after use.
- ❑ If water is known to be high in mineral content, use a water softener on your water system, or de-scale as needed.
- ❑ Do not allow acidic, caustic or abrasive fluids to be pumped through system.
- ❑ Always use high grade quality cleaning products.
- ❑ Never run pump dry for extended periods of time.
- ❑ Use clean fuel-kerosene, No. 1 fuel oil, or diesel.
- ❑ Clean or replace fuel filter every 100 hours of operation.
- ❑ Avoid water contaminated fuel as it will damage the fuel pump.
- ❑ If machine is operated with smoky or eye burning exhaust, coils soot up and prevent water from reaching maximum operating temperature.
- ❑ Never allow water to be sprayed on or near the engine or burner assembly or any electrical component.
- ❑ Periodically delime coils per instructions.
- ❑ Check to see that engine is properly lubricated.

It is advisable, periodically, to visually inspect the burner. Check air inlet to make sure it is not clogged or blocked. Wipe off any oil spills and keep this equipment clean and dry.

The flow of combustion and ventilating air to the burner must not be blocked or obstructed in any manner.

The area around the Landa washer should be kept clean and free of combustible materials, gasoline and other flammable vapors and liquids.

MAINTENANCE & SERVICE

Unloader Valves

Unloader valves are preset and tested at the factory before shipping. Tampering with the factory setting may cause personal injury and/or property damage, and will void the manufacturers warranty.

Winterizing Procedure

Damage due to freezing is not covered by warranty. Adhere to the following cold weather procedures whenever the washer must be stored or operated outdoors under freezing conditions. During winter months, when temperatures drop below 32°F, protecting your machine against freezing is necessary. Store the machine in a heated room. If this is not possible then mix a 50/50 solution of antifreeze and water in the float tank. Turn the engine on to siphon the antifreeze mixture through the machine. If compressed air is available, an air fitting can be screwed into the float tank by removing the float tank strainer and fitting. Inject the compressed air. Water will be blown out of the machine when the trigger on the spray gun is opened.

High Limit Hot Water Thermostat

For safety, each machine is equipped with a temperature sensitive high limit control switch. In the event that the water should exceed its operating temperature, the high limit control will turn the burner off until the water cools then automatically reset itself. The thermostat sensor is located on the discharge side of the heating coil. The thermostat control dial is located on the control panel.

Pumps

Use only SAE 30 weight non-detergent oil. Change oil after first 50 hours of use. Thereafter, change oil every three months or at 500 hour intervals. Oil level should be checked through use of dipstick found on top of pump, or the red dot visible through the oil gauge window. Oil should be maintained at that level.

Cleaning of Coils

In alkaline water areas, lime deposits can accumulate rapidly inside the heating coil. This growth is increased by the extreme heat build up in the coil. The best prevention for liming conditions is to use high quality cleaning chemicals. In areas where alkaline water is an extreme problem, periodic use of Landa Deliming Powder (Landa Part #9-028008) will remove lime and other deposits before coil becomes plugged.

Deliming Coils

Periodic flushing of coils or optional float tank is recommended.

Step 1 Fill a container with 4 gallons of water, then add 1 lb. of deliming powder. Mix thoroughly. Pour mixture into float tank.

Step 2 Remove wand assembly from spray gun and put spray gun into float tank. Secure the trigger on the spray gun into the open position.

Step 3 Turn engine on, allowing solution to be pumped through coils back into the float tank. The solution should be allowed to circulate 2-4 hours or until the color changes.

Step 4 After circulating solution, flush the entire system with fresh water. Clean out float tank and then reinstall wand assembly to spray gun.

Removal of Soot and Heating Coil

In the heating process, fuel residue in the form of soot deposits may develop on the heating coil pipe and block air flow which will affect burner combustion. When soot has been detected on visual observation, the soot on the coil must be washed off after following the coil removal steps.

Pressure Relief Valve

Each machine is equipped with a relief valve to relieve pressure in the system when higher than normal operating pressures are encountered or if the unloader valve should fail. Unusually high pressures come from an object plugging the spray nozzle. If operating pressure is found to be normal and the relief valve continues to leak, repair or replace valve.

CAUTION: This valve must be opened each year to check operation.

Rupture Disk

If pressure from pump or thermal expansion should exceed safe limits, the rupture disk will burst, allowing high pressure to be discharged through hose to ground. The ruptured disk needs to be replaced.

Fuel

Use clean fuel oil that is not contaminated with water and debris. Replace fuel filter and drain tank every 100 hours of operation.

Use No. 1 or No. 2 heating oil (ASTM D306) only. **NEVER** use gasoline in your burner fuel tank. Gasoline is more combustible than fuel oil and could result in a serious explosion. **NEVER** use crankcase or waste oil in your burner. Fuel unit malfunction could result from contamination.

Fuel Control System

This machine utilizes a fuel solenoid valve located on the fuel pump to control the flow of fuel to the combustion chamber. The solenoid, which is normally closed, is activated by a flow switch when water flows through it. When the operator releases the trigger on the spray gun, the flow of water through the flow switch stops, turning off the electrical current to the fuel solenoid.

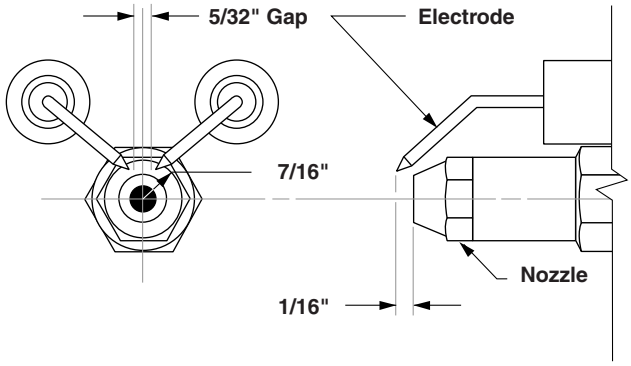
The solenoid then closes, shutting off the supply of fuel to the combustion chamber. Controlling the flow of fuel in this way gives an instantaneous burn-or-no-burn situation, thereby eliminating high and low water temperatures, and combustion smoke normally associated with machines incorporating a spray gun.

CAUTION: Periodic inspection, to insure that the fuel solenoid valve functions properly, is recommended. This can be done by operating the machine and checking to see that the burner is not firing when the spray gun is in the off position.

Fuel Pressure Adjustment

To control water temperature, adjust fuel pressure by turning the regulating pressure adjusting screw clockwise to increase, counterclockwise to decrease. Do not exceed 200 psi. **NOTE:** When changing fuel pump, a bypass plug must be installed in return port or fuel pump will not prime.

ELECTRODE SETTING:



Burner Nozzle

Keep the tip free of surface deposits by wiping it with a clean, solvent-saturated cloth, being careful not to plug or enlarge the nozzle. For maximum efficiency, replace the nozzle each season.

Burner Air Adjustment:

The oil burner on this machine is preset for operation at altitudes below 1000 feet. If operated at higher altitudes, it may be necessary to adjust the air band setting. Adjust air band for a #1 or #2 smoke spot on the Bacharach scale. If a smoky or eye-burning exhaust is being emitted from the stack, two things should be checked. First, check the fuel to be certain that kerosene or No.1 home heating fuel is being used. Next, check the air adjustment on the burner. An oily, smoky fire indicates a lack of air and the air band should be moved to allow the air to flow through the burner. Sharp eye-burning fumes indicate too much air flowing through the combustion chamber. The air band should be readjusted to allow less air to flow through the burner.

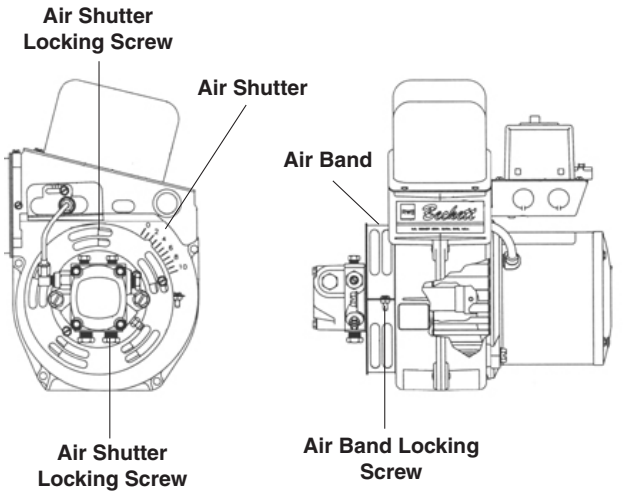
CAUTION: If white smoke appears from burner exhaust vent during start-up or operation, discontinue use and readjust air bands.

NOTE: If a flue is installed, have a professional serviceman adjust your burner for a #1 or #2 smoke spot on the Bacharach scale.

For additional burner component information, see Burner Assembly Exploded View page. It is recommended that the oil burner be serviced yearly or as needed. Contact your local service center.

MAINTENANCE & SERVICE

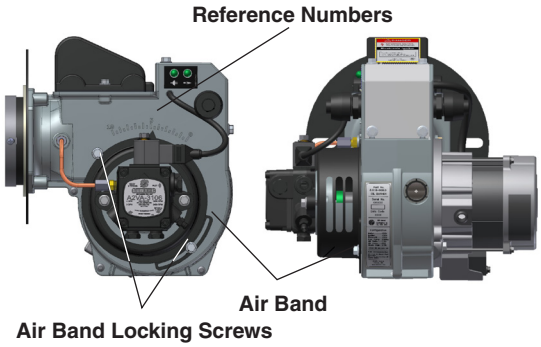
Beckett Burner Air Adjustment:



To adjust, start the machine and turn burner ON. Loosen two locking screws found in the air shutter openings (see illustration) and close air shutter until black smoke appears from burner exhaust vent. Note air band position. Next, slowly open the air shutter until white smoke just starts to appear. Turn air shutter halfway back to the black smoke position previously noted. Tighten locking screws.

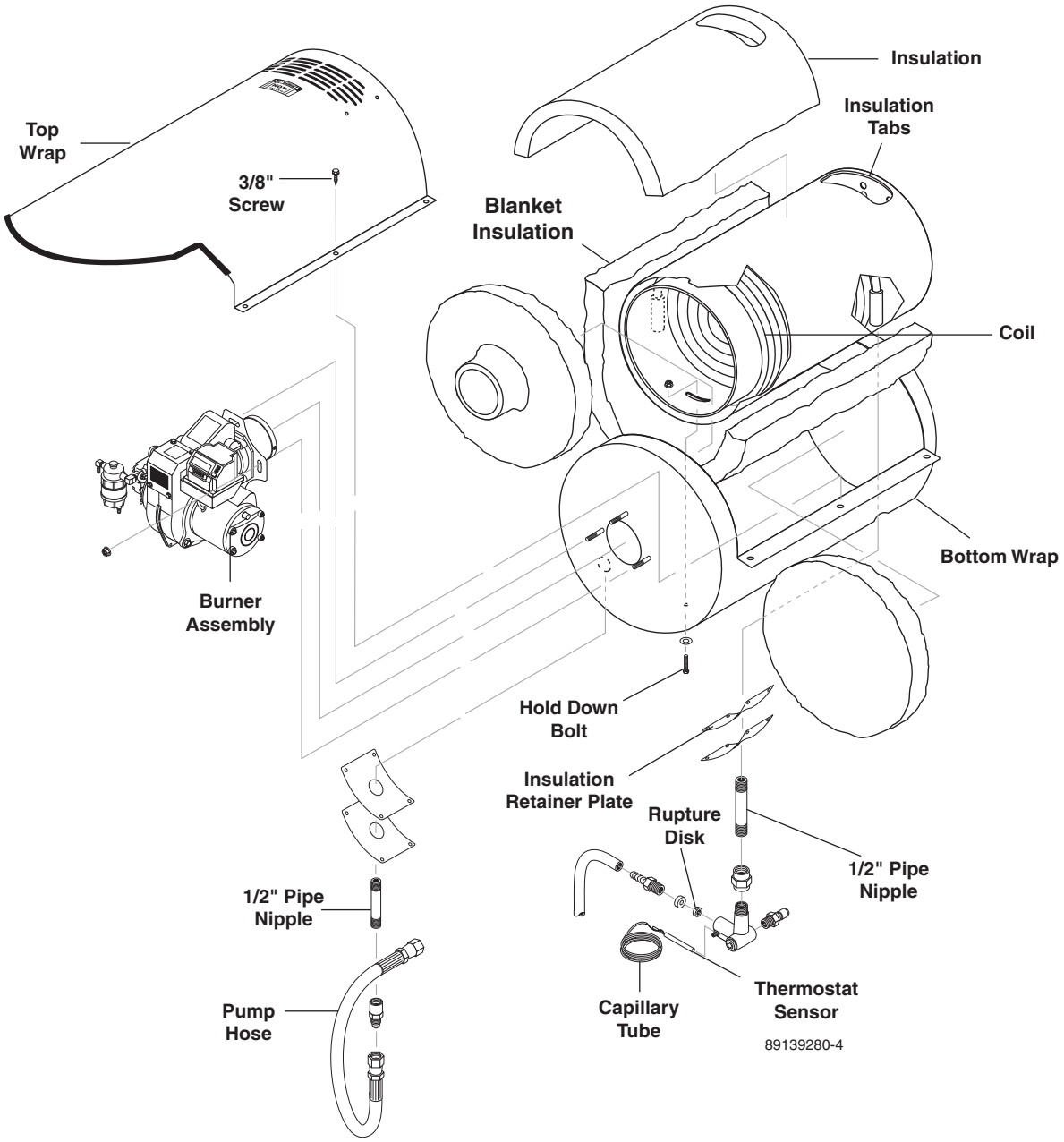
If the desired position cannot be obtained using only the air shutter, lock the air shutter in as close a position as can be obtained, then repeat the above procedure on the air band setting.

LANDA Surefire Burner Air Adjustment



To adjust, start machine and turn burner ON. Loosen two locking screws found on the air band and close air band until black smoke appears from burner exhaust vent. Note air band position. Next, slowly open the air band until white smoke just starts to appear. Turn air band halfway back to the previously noted position. Tighten locking screws.

MAINTENANCE - COIL REMOVAL & REINSTALLATION



Coil Removal

Coil removal, because of freeze breakage or to clean soot from it, can be done quickly and easily.

1. Disconnect hose from pump to inlet side of the coil.
2. Carefully disconnect the thermostat sensor making sure you do not crimp the capillary tube.
3. Remove burner assembly from combustion chamber.
4. Remove the 3-3/8" bolts from each side of coil and tank assembly (these bolts are used to fasten tank to chassis).
5. Remove fittings connected to the 1/2" pipe nipples from inlet and discharge sides of coil.
6. Remove top tank wrap, bend back insulation tabs and fold back blanket.
7. Remove bolts that hold down coil to bottom wrap.
8. Remove coil.
9. Replace or repair the coil and any insulation found to be broken or torn.
10. Remove insulation retainer plates.

Coil Reinstallation

Reinstall new or cleaned coil reversing Steps 9 through 1.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
LOW OPERATING PRESSURE	Faulty pressure gauge	Install new gauge.
	Insufficient water supply	Use larger supply hose; clean filter at water inlet.
	Old, worn or incorrect spray nozzle	Match nozzle number to machine and/or replace with new nozzle.
	Belt slippage	Tighten or replace; use correct belt.
	Plumbing or hose leak	Check plumbing system for leaks. Retape leaks with teflon tape.
	Faulty or misadjusted unloader valve	Adjust unloader for proper pressure. Install repair kit when needed.
	Worn packing in pump	Install new packing kit.
	Fouled or dirty inlet or discharge valves in pump	Clean inlet and discharge valves.
	Worn inlet or discharge valves	Replace with valve kit.
	Leaking pressure control valve	Rebuild or replace as needed.
	Slow engine RPM	Set engine speed at proper specifications.
	Pump sucking air	Check water supply and possibility of air seepage.
	Valves sticking	Check and clean or replace if necessary.
	Unloader valve seat faulty	Check and replace if necessary.
BURNER WILL NOT LIGHT	Little or no fuel	Fill tank with fuel.
	Improper fuel or water in fuel	Drain fuel tank and fill with proper fuel.
	Clogged fuel line	Clean or replace.
	Plugged fuel filter	Replace as needed.
	Misadjusted burner air bands	Replace air bands for clean burn.
	Little or no fuel pressure from fuel pump	Increase fuel pressure to specifications and/or replace fuel pump. Test with pressure gauge.
	Faulty burner transformer	Test transformer for proper arc between contacts. Replace as needed.
	Disconnected or short in electrical wiring	All wire contacts should be clean and tight. No breaks in wires.
	Flex coupling slipping on fuel pump shaft or burner motor shaft	Replace if needed.
	On-Off switch defective	Check for electrical current reaching burner assembly with burner switch on.
	Heavy sooting on coil and burner can cause interruption of air flow and shorting of electrodes	Clean as required.
	Improper electrode setting	Check and reset according to diagram in Operator's Manual.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
BURNER WILL NOT LIGHT (Continued from previous page)	Fuel not reaching combustion chamber	Check fuel pump for proper flow. Check solenoid flow switch on machines with spray gun control, for proper on-off fuel flow control.
	Clogged burner nozzle	Clean as required.
	Thermostat faulty or slow engine speed	Increase engine RPM to increase voltage.
	Flow switch malfunction	Remove, test for continuity and replace as needed.
	Flow solenoid malfunction	Replace if needed.
FLUCTUATING PRESSURE	Valves worn	Check and replace if necessary.
	Blockage in valve	Check and replace if necessary.
	Pump sucking air	Check water supply and air seepage at joints in suction line.
	Worn piston packing	Check and replace if necessary.
	Gasoline Engine Altitude	The gasoline engine is preset for operation at altitudes below 1000 feet above sea level. If operated at higher altitudes, it may be necessary to install a high altitude main jet in the carburetor. Contact your local authorized engine sales and service center for details.
MACHINE SMOKES	Improper fuel or water in fuel	Drain tank and replace contaminated fuel.
	Improper air adjustment	Readjust air bands on burner asssembly.
	Low fuel pressure	Adjust fuel pump pressure to specifications.
	Plugged or dirty burner nozzle	Replace nozzle.
	Faulty burner nozzle spray pattern	Replace nozzle.
	Heavy accumulation of soot on coils and burner assembly	Remove coils and burner assembly, clean thoroughly.
	Obstruction in smoke stack	Check for insulation blockage or other foreign objects.
	Low engine RPM	Increase RPM.
LOW WATER TEMPERATURE	Improper fuel or water in fuel	Replace with clean and proper fuel.
	Low fuel pressure	Increase fuel pressure.
	Weak fuel pump	Check fuel pump pressure. Replace pump if needed.
	Fuel filter partially clogged	Replace as needed.
	Soot build-up on coils not allowing heat transfer	Clean coils.
	Improper burner nozzle	See specifications.
WATER TEMPERATURE TOO HIGH	Incoming water to machine warm or hot	Lower incoming water temperature.
	Fuel pump pressure too high	See specifications for proper fuel pressure.
	Fuel pump defective	Replace fuel pump.
	Detergent line sucking air	Tighten all clamps. Check detergent lines for holes.
	Defective temperature switch	Replace.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
WATER TEMPERATURE TOO HIGH	Incorrect fuel nozzle size	See specifications for proper fuel pressure.
	Insufficient water supplied	Check water GPM to machine
	Restrict water flow	Check nozzle for obstruction, proper size.
PUMP NOISY	Air in suction line	Check water supply and connections on suction line.
	Broken or weak inlet or discharge valve springs	Check and replace if necessary.
	Excessive matter in valves	Check and clean if necessary.
	Worn bearings	Check and replace if necessary.
PRESENCE OF WATER IN OIL	Oil seal worn	Check and replace if necessary.
	High humidity in air	Check and change oil twice as often.
WATER DRIPPING FROM UNDER PUMP	Piston packing worn	Check and replace if necessary.
	O-Ring plunger retainer worn	Check and replace if necessary.
	Cracked piston	Check and replace if necessary.
	Pump protector	Lower water supply pressure. Do not run with spray gun closed longer than 5 minutes.
OIL DRIPPING	Oil seal worn	Check and replace if necessary.
EXCESSIVE VIBRATION IN DELIVERY LINE	Irregular functioning of the valves	Check and replace if necessary.
DETERGENT NOT DRAWING	Air leak	Tighten all clamps. Check detergent lines for holes.
	Restricter in float tank is missing	Replace restrictor. Check for proper orifice in restrictor.
	Filter screen on detergent suction hose plugged	Clean or replace.
	Dried up detergent plugging metering valve	Disassemble and clean thoroughly.
	High viscosity of detergent	Dilute detergent to specifications.
	Hole in detergent line(s)	Repair hole.
	Low detergent level	Add detergent, if needed.
BURNER MOTOR WILL NOT RUN	Fuel pump seized	Replace fuel pump.
	Burner fan loose or misaligned	Position correctly, tighten set screw.
	Defective control switch	Replace switch.
	Loose wire	Check and replace or tighten wiring.
	Defective burner motor	Replace motor.
RELIEF VALVE/ RUPTURE DISK LEAKS WATER	Excessive pressure, thermal expansion	Replace or repair.

PREVENTATIVE MAINTENANCE

PREVENTATIVE MAINTENANCE:

This pressure washer was produced with the best available materials and quality craftsmanship. However, you as the owner have certain responsibilities for the correct care of the equipment. Attention to regular preventative maintenance procedures will assist in preserving the performance of your equipment. Contact your Landa dealer for maintenance. Regular preventative maintenance will add many hours to the life of your pressure washer. Perform maintenance more often under severe conditions.

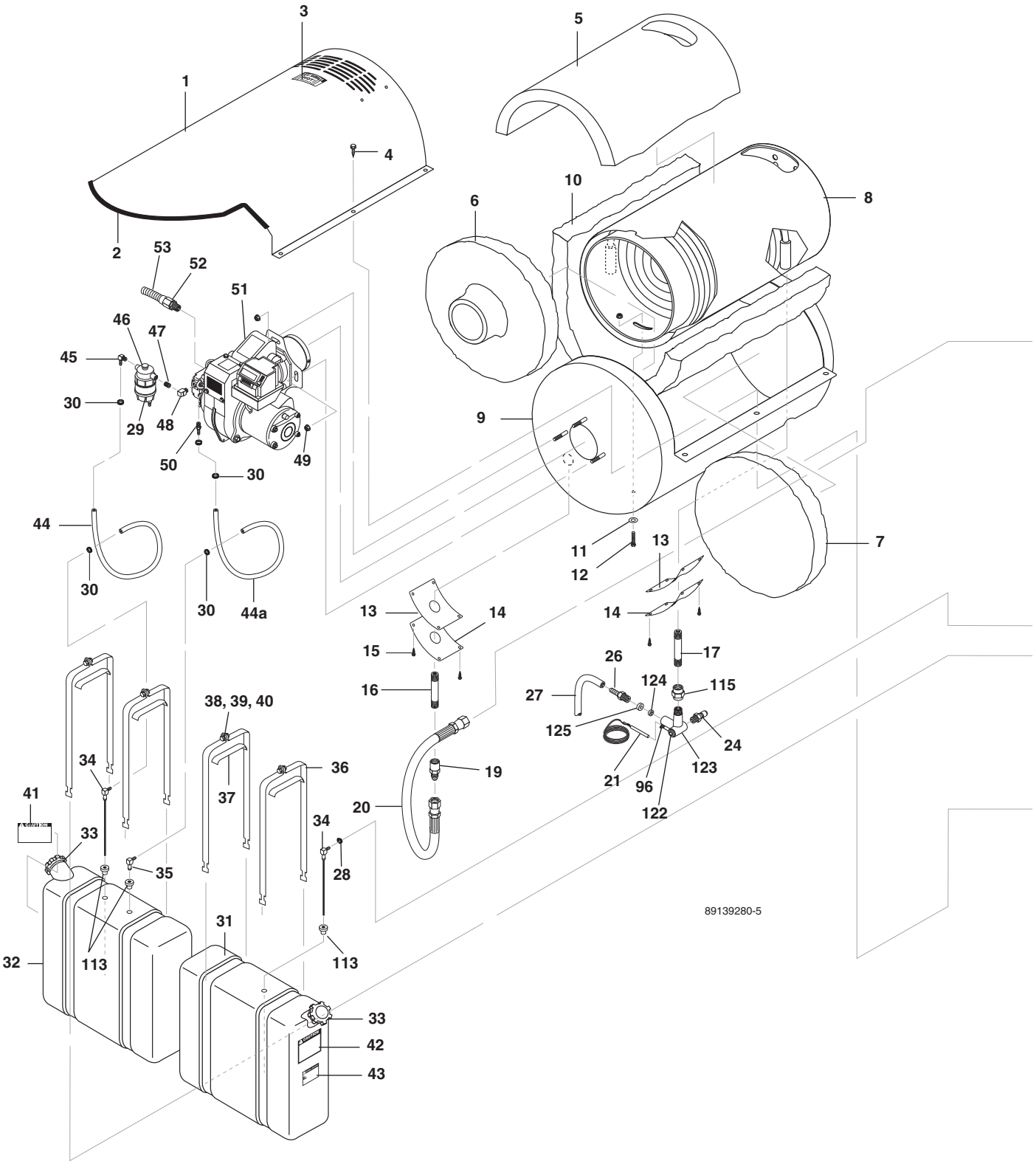
MAINTENANCE SCHEDULE		
Engine Oil	Inspect	Daily
	Change	Every 25 hours
	Filter	Every 50 hours
Air Cleaner	Inspect	Every 50 hours or monthly
	Clean	Every 3 months
Battery Level		Check monthly
Engine Fuel Filter		500 hours or 6 months
Spark Plug Maintenance		500 hours or 6 months
Clean Fuel Tank(s)		Annually
Replace Fuel Lines		Annually
Pump Oil (Non-detergent 10/40W)	Inspect	Oil level daily
	Change	After first 50 hours, then every 500 hours or annually
Clean Burner Filter		Monthly (More often if fuel quality is poor)
Remove Burner Soot		Annually
Burner Adjustment/Cleaning		Annually
Replace Burner Nozzle		Annually
Descale Coil		Annually (More often if required)
Replace High Pressure Nozzle		Every 6 months
Replace Quick Connects		Annually
Clean Water Screen/Filter		Weekly
Replace HP Hose		Annually

OIL CHANGE RECORD

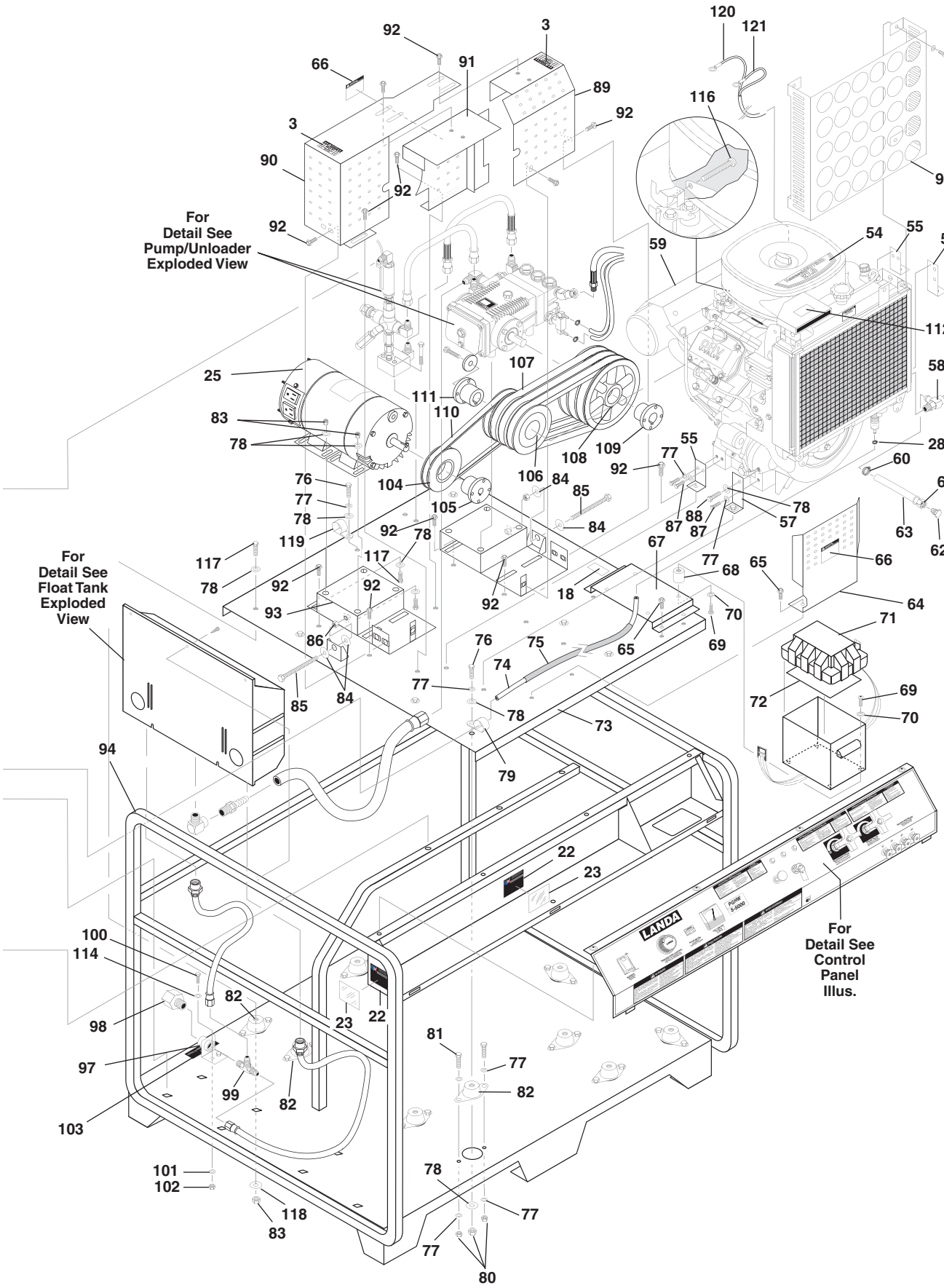
DATE OIL CHANGED MONTH/DAY/YEAR	ESTIMATED OPERATING HOURS SINCE LAST OIL CHANGE

DATE OIL CHANGED MONTH/DAY/YEAR	ESTIMATED OPERATING HOURS SINCE LAST OIL CHANGE

EXPLODED VIEW - LEFT SIDE



EXPLODED VIEW - RIGHT SIDE


For Detail See Pump/Unloader Exploded View
For Detail See Float Tank Exploded View
For Detail See Control Panel Illus.
LANDA

EXPLODED VIEW - PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	8.912-192.0	Top Wrap, Stainless Steel	1
2	9.802-071.0	Trim, 750 B2 x 1/16" Black	36"
3	9.800-006.0	Label,"Hot/Caliente" w/Arrows Warning	3
4	9.802-766.0	Screw, 3/8 x 1 HX Wash Head Sheet Metal ZN	6
5	9.802-902.0	Insulation/Blanket-Die Cut 28" x 24"	1
6	9.802-894.0	Insulation, Burner Head w/Hole	1
7	9.802-883.0	Insulation, Front Head, No Hole	1
8	8.912-232.0	Coil, Dura, SCH 160	1
9	8.916-514.0	Wrap, Bottom, Stainless Steel	1
10	9.802-896.0	Insulation, Blanket-No Foil, 24" x 57"	1
11	8.725-394.0	Washer, 3/8" SAE Flat	4
12	9.802-727.0	Bolt, 3/8" x 1-3/4", Tap	2
13	8.933-009.0	Gasket, Burner Plate	2
14	9.803-132.0	Insulation Retainer Plate	2
15	9.802-797.0	Screw, SS #10 x 1/2" Hex Head TEK	8
16	8.705-994.0	Nipple, 1/2" x 4" Schd 160 Galv	1
17	8.705-993.0	Nipple, 1/2" x 3" Schd 160 Galv	1
18	8.724-515.0	Caution, Risk of Injury Disconnect Battery	1
19	8.706-319.0	Adapter, 1/2" FPT x 1/2" Male JIC Steel	1
20	8.918-422.0	Hose, 3/8" x 20", 2 Wire, 6000 psi Pressure Loop	1
21	8.750-094.0	Thermostat 302° F	1
22	8.932-968.0	Label, Outdoor Use	2
23	9.800-034.0	Label, Clear Lexan	2
24	8.707-120.0	Nipple, 3/8" Steel Male 11,000 PSI	1
25	8.716-610.0	Generator, Winco	1
26	8.707-019.0	Push-on, 1/2" Barb x 3/8" MPT	1
27	4-02110000	Hose, 1/2", Push-on	21"
28	8.709-069.0	Clamp, Screw, #4 62602	2
29	8.709-152.0	Fuel Filter, Disposable	1
30	6.390-126.0	Clamp, Hose, .46-, .54 ST	6
31	8.706-606.0	Tank, Fuel, 10 Gal. Poly, Red, SGHW Only	1
32	8.706-603.0	Tank, Fuel, 10 Gal. Poly, Yellow	1
33	2-01167	Cap, Fuel Tank, Plastic H60-AV	2
34	8.706-496.0	Dip Tube Assy, Plastic, 17.75"	2
35	9.802-054.0	Elbow, Fuel Tank Zinc	1
36	8.912-699.0	Strap, MHP Fuel Tank w/Hole	4
37	9.802-193.0	Gasket, Neoprene, SC41 w/PSA Per Ft.	4
38	8.725-395.0	Nut, 3/8", ESNA, NC	4
39	8.725-394.0	Washer, 3/8", SAE, Flat	8
40	9.802-727.0	Bolt, 3/8" x 1-3/4", Tap	4
41	10-020110	Label, Use Only Kerosene	1
42	9.800-001.0	Label, This Tank For Gas Only	1
43	9.800-008.0	Label, Danger Cool Engine	1
44	4-02100000	Hose, 1/4", Push-on, Fuel Line	15"
44a	4-02100000	Hose, 1/4", Push-on, Fuel Line	11"
45	8.706-958.0	Hose Barb, 1/4" Barb x 1/4" Pipe 90°	1
46	8.709-158.0	Filter, Landa Branded, Fuel/Oil/H_20 Separator (MDL 140)	1
47	8.706-777.0	Nipple, 1/4" Close 3326-4	1
48	8.706-827.0	Elbow, 1/4" Street	1
49	9.802-781.0	Nut, 3/8", Flange Wiz Loc, NC	4
50	8.706-941.0	Hose Barb, 1/4" Barb x 1/4" Ml Pipe, Brass	1
51	For Details, See Burner Specifications pg. 30		
52	8.716-547.0	Connector, 1/2" L/T, Straight, Black	1
53	9.802-448.0	Conduit, Water Tight, Flex, 1/2" 100'/box	24"
54	5-01096	Engine, Kawasaki 27 HP Water Cooled	1
55	95-07290094	Bracket, Front Engine Mount, Kawasaki 27 HP	2
56	8.912-941.0	Bracket, LH Engine Mount, Kawasaki 27 HP	1
57	8.912-940.0	Bracket, Rh Engine Mount, Kawasaki 27 HP	1
58	8.714-096.0	Adapter, Oil Drain, Kawasaki 27 HP	1
59	8.714-094.0	Muffler, Silent Exhaust, Kawasaki 27 HP	1
	8.714-095.0	Tailpipe, Silent Exhaust, Kawasaki 27 HP	1
60	2-9002	Clamp, Screw, #6	1
61	9.802-151.0	Swivel,1/2 JIC Fem, Push-on	1
62	9.802-126.0	Plug, 1/2" JIC, Flare, 639F-8	1
63	4-02110000	Hose, 1/2", Push-on, Per/Ft	18"
64	8.912-493.0	Guard, Kawasaki Fan Belt, PGHW5-5000	1
65	9.803-551.0	Screw, 5/16"x 3/4" Whiz	6
66	8.932-965.0	Label, Warning-Exposed Pulleys	2
67	8.912-714.0	Bracket, Battery, MHP/99	1
68	9.803-532.0	Isolator, 5/16" Thrd, Fem x Fem, 1" X 1"	1
69	9.803-541.0	Screw, 5/16"-18 x 1/2" CS SOC BH NC ZN	4

EXPLODED VIEW - PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
70	9.803-542.0	Washer, 5/16", Star, External	8
71	8.706-652.0	Battery Box, Small	8
72	9.802-091.0	Plate, Battery Box, Sm. Polypro	1
73	8.912-276.0	Platform, Power, PGHW5-50524E	1
74	9.802-263.0	Hose, 5/16", Push-on	41"
75	8.716-011.0	Conduit, Flexo 1/2" Blk SE50 P-DRO	33"
76	9.802-717.0	Bolt, 5/16" x 2-1/2", NC HH	2
77	8.718-980.0	Washer, 5/16", Flat, SAE	22
78	8.725-394.0	Washer, 3/8", SAE, Flat	14
79	9.802-207.0	Clamp, Round, 0.56 I.D.	1
80	9.802-776.0	Nut, 5/16", ESNA, NC	22
81	90-1007	Bolt, 5/16" x 1", NC HH	20
82	9.802-057.0	Isolator, Vibration Mnt, 100 Lbs	10
83	8.725-395.0	Nut, 3/8", ESNA, NC	8
84	9.802-809.0	Washer, 1/2", Flat, SAE	4
85	9.802-740.0	Bolt, 1/2" x 3-1/2", NC HH	2
86	9.802-790.0	Nut, 1/2", HEX, NC	2
87	9.802-742.0	Bolt, 8 mm x 20 mm, HH	6
88	8.718-722.0	Bolt, 10 mm x 25 mm, HH	2
89	8.912-491.0	Guard Belt Right PGHW5-5000	1
90	8.912-490.0	Guard Belt Left PGHW5-5000	1
91	8.912-492.0	Guard Belt Mid PGHW5-5000	1
92	9.802-767.0	Screw, 3/8" x 3/4" HH NC Whiz	20
93	8.912-465.0	Rail, Generator Assy, Gas Slide	1
94	8.912-376.0	Cage Assembly, PGHW5-5000	1
95	8.916-152.0	Guard Kawasaki, Radiator	1
96	9.196-012.0	Screw 10/24 x 1/4	1
97	9.802-961.0	Hose Connection Bracket	4
98	9.802-146.0	Swivel, 1/2" MP x 3/4" GHF w/Strainer	2
99	9.802-134.0	Tee, 1/2" x 1/2" JIC	2
100	9.802-700.0	Bolt, 1/4" x 3/4", NC HH	2
101	9.802-802.0	Washer, 1/4", Flat, SAE	4
102	90-2000	Nut, 1/4", ESNA, NC	2
103	8.725-134.0	Label, Inlet	1
104	5-404034	Pulley, BK 34 H	1
105	9.802-397.0	Bushing, H x 5/8"	1
106	8.715-624.0	Pulley, 4B38SD	1
107	9.802-413.0	Belt, BX 32	3
108	8.715-618.0	Pulley, 3BK 80 H	1
109	9.802-403.0	Bushing, H x 25 mm	1
110	9.802-412.0	Belt, BX 22, "Opti-Belt" Only	1
111	8.715-660.0	Bushing, SD 1 x 1/8"	1
112	8.724-514.0	Label, Do Not Remove When Hot	1
113	9.802-053.0	Bushing, Rubber, Nitrile	3
114	8.752-150.0	▲ Cord, Molded	1
115	8.706-141.0	Coupling, 1/2" Hex	1
116	8.718-781.0	Screw, M5X.8 x 40 mm	1
117	9.802-730.0	Bolt, 3/8" x 2-1/2" GR5 Zinc	8
118	9.802-099.0	Washer, Snubbing	10
119	9.802-206.0	Clamp, Hose COV211	1
120	9.802-504.0	Cable, Battery, 36" Black	1
121	8.716-490.0	Cable, Battery, 61" Red	1
122	8.706-248.0	Plug 3/8"	1
123	9.149-003.0	Manifold Discharge	1
124	8.725-944.0	Rupture Disk # 8000	1
125	9.184-030.0	Spacer, Rupture Disk	1

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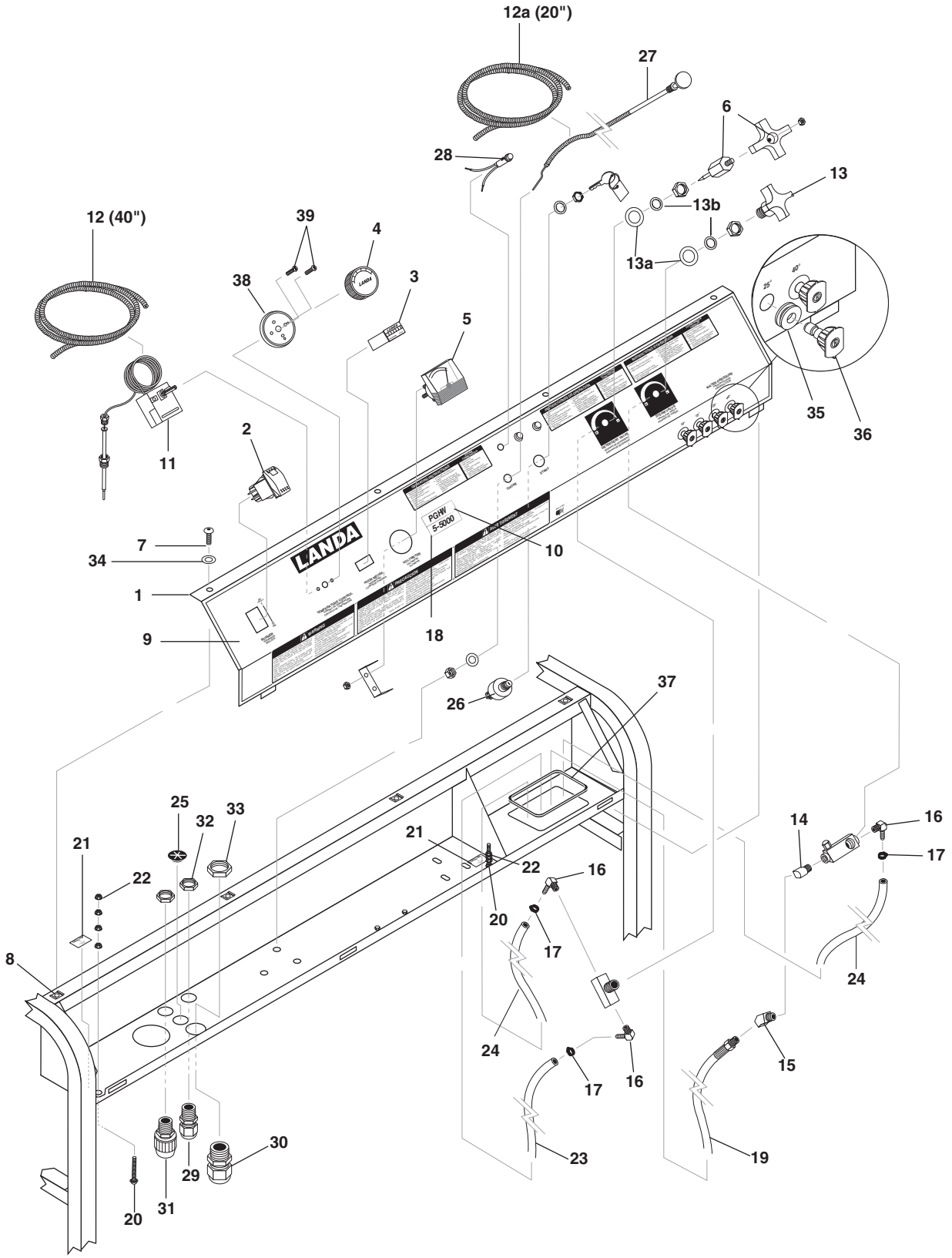
CONTROL PANEL - EXPLODED VIEW



CONTROL PANEL - PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	8.912-279.0	Control Panel PGHW5-5000	1
2	6-0240	Switch, Rocker, Carling w/Green Lens	1
3	9.802-283.0	Hour Meter	1
4	8.750-096.0	Knob, Thermostat 302° F	1
5	8.712-159.0	Voltmeter, 120 V AC	1
6	8.707-317.0	Valve, Flow Control	1
7	90-1995	Screw, 1/4 x 182, Bohc Hex Wash Sl Mach/Blk	4
8	9.802-794.0	Nut, Cage, 1/4" x 12 GA	4
9	8.940-049.0	Label, PGHW 5-5000 Control Panel	1
10	8.900-416.0	Label, 5-5000 (Lexan)	1
11	8.750-094.0	Thermostat, Adj, 302F	1
12	9.802-447.0	Conduit Corrugated Tubing 1/4"	40"
12a	9.802-447.0	Conduit Corrugated Tubing 1/4"	20"
13	9.802-187.0	Valve, Flow Control w/ Metering	1
13a	90-4005	Washer, 5/8" Flat, SAE	2
13b	8.719-011.0	Washer, 5/8" Star	2
14	8.706-200.0	Elbow, 1/4", Street TF3409X4	1
15	9.802-031.0	Elbow, 45° 1/4 Street	1
16	8.706-958.0	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	3
17	6.390-126.0	Clamp, Hose, .46-, .54 ST	3
18	8.900-249.0	Label, PGHW, Lexan	1
19	8.918-419.0	Hose, 1/4" X 36", 2 Wire, Gauge Hose	1
20	9.802-762.0	Screw, 10/32" X 1-1/4" RH, SL, Blk	2
21	9.800-040.0	Label, Ground Symbol	2
22	9.802-695.0	Nut, 10/32" KEPS	7
23	4-02080000	Tube, 1/4" X 1/2", Clear Vinyl	8'
	8.707-058.0	▲ Strainer, 1/4" Brass w/ Check Valve	1
24	4-02100000	Hose, 1/4", Push-on, Fuel Line (44")	2
25	8.706-755.0	Bushing, .875", 2119	1
26	8.716-103.0	Switch, Key, With Drain Holes	1
27	8.749-878.0	Cable, Choke 42"	1
28	6-050418	Light, Blue 14V	3
29	9.802-514.0	Strain Relief, Strt, LQ Tite 3231 Small	1
30	9.802-518.0	Strain Relief, Strt, LQ Tite 3234 Large	1
31	8.716-547.0	Connector, 1/2" L/T Straight, Blk	1
32	9.802-525.0	Lock Nut, 1/2" 8463	1
33	9.802-526.0	Lock Nut, 3/4" 8465	1
34	9.804-082.0	Washer, 1/4" Black	4
35	9.802-064.0	Grommets, Nozzles	5
36	For Nozzle Details See Page 26		
37	9.802-071.0	Trim, 750 B2 x 1/16" Black	57"
38	8.712-190.0	Bezel, Thermostat	1
39	8.718-779.0	Screw, 4mm x 6mm	2

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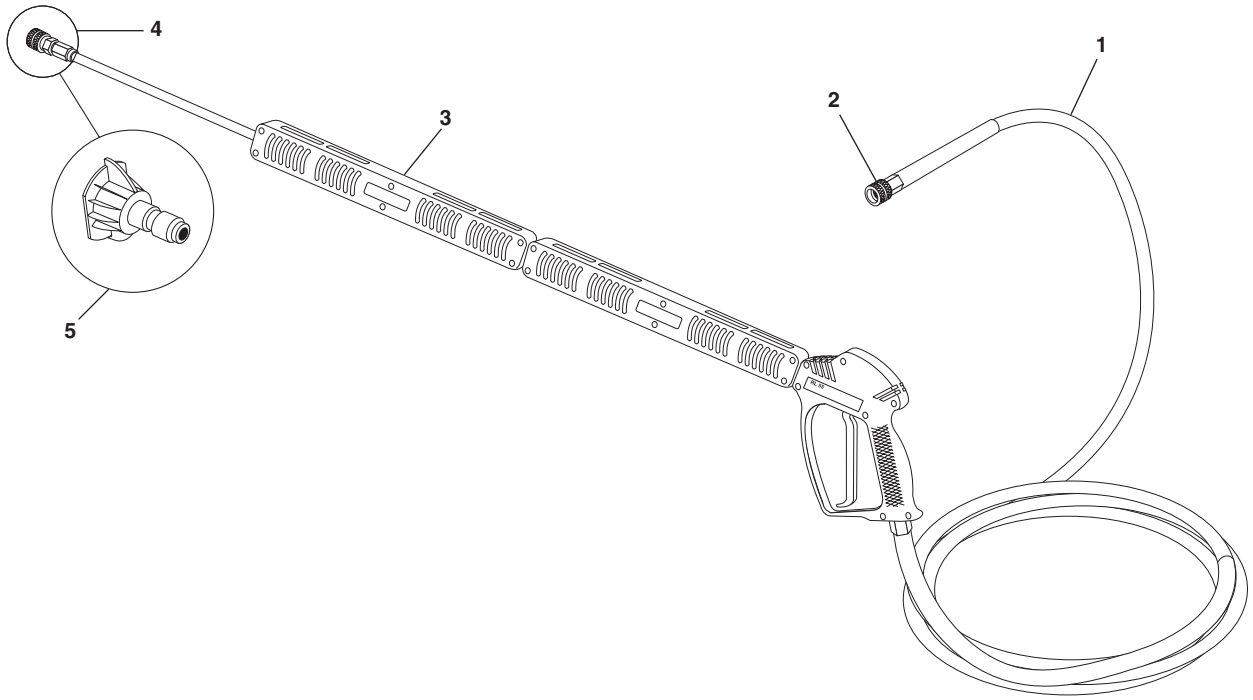
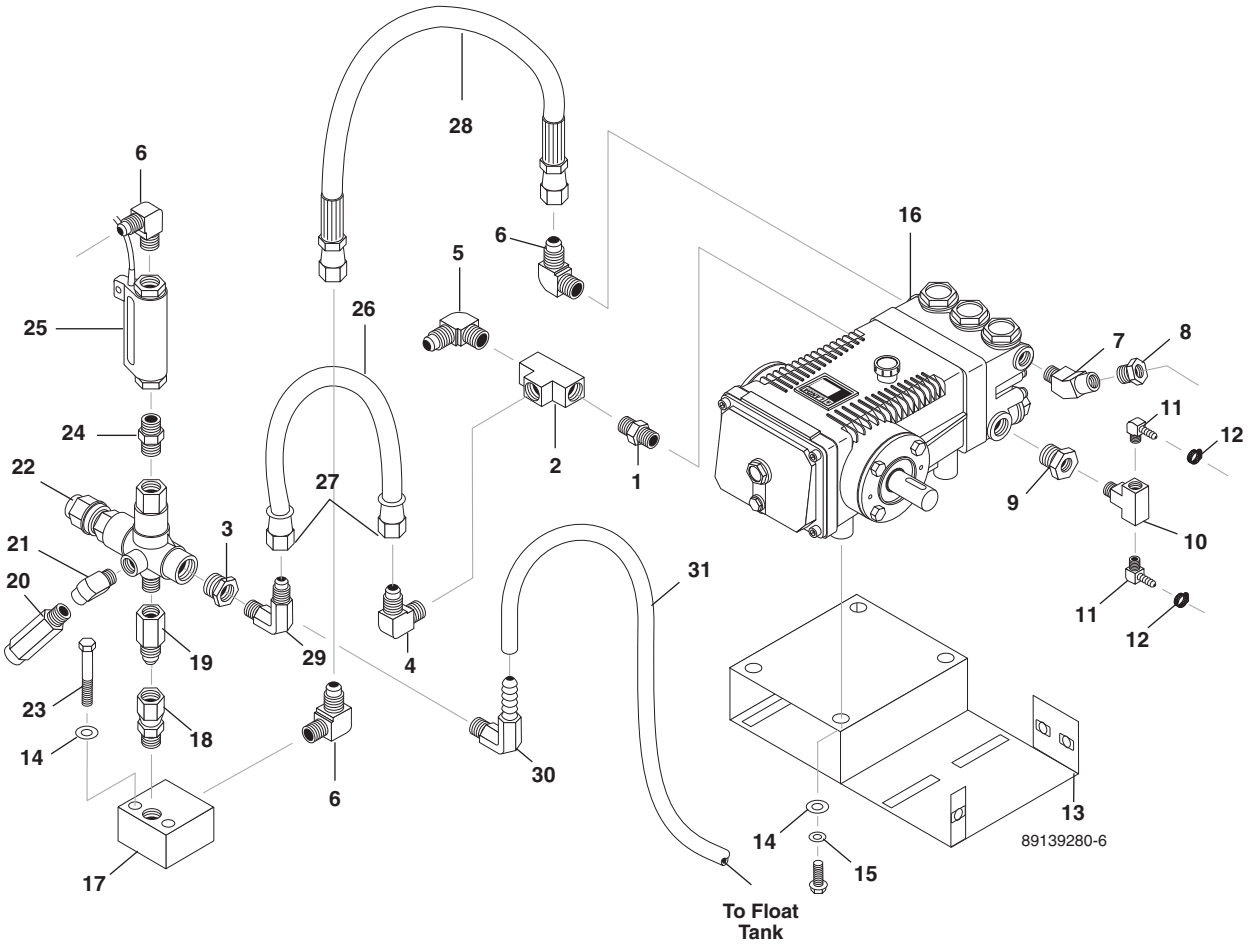
HOSE, SPRAY GUN & WAND



HOSE, SPRAY GUN & WAND PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	8.916-742.0	Hose, 3/8" x 50', 2 Wire Tuff-Skin	1
2	9.802-166.0	Coupler, 3/8" Female, 11,000 PSI Snap-Tite	1
	8.706-712.0	▲ Seal, U-Pack, 3/8" Snap-Tite 11,000 PSI	1
3	9.802-227.0	Gun, w/Wand, 5000 PSI 52" RL 55L	1
4	9.802-165.0	Coupler, 1/4" Male Brass	1
	9.804-043.0	Seal, U-Pack, 1/4" Snap-Tite 11,000 PSI	1
5	8.712-349.0	Nozzle, SAQCMEG 0004.5 Red	1
	8.712-350.0	Nozzle, SAQCMEG 15045 Yellow	1
	8.712-351.0	Nozzle, SAQCMEG 25045 Green	1
	8.712-352.0	Nozzle, SAQCMEG 4004.5 White	1

PUMP & UNLOADER EXPLODED VIEW

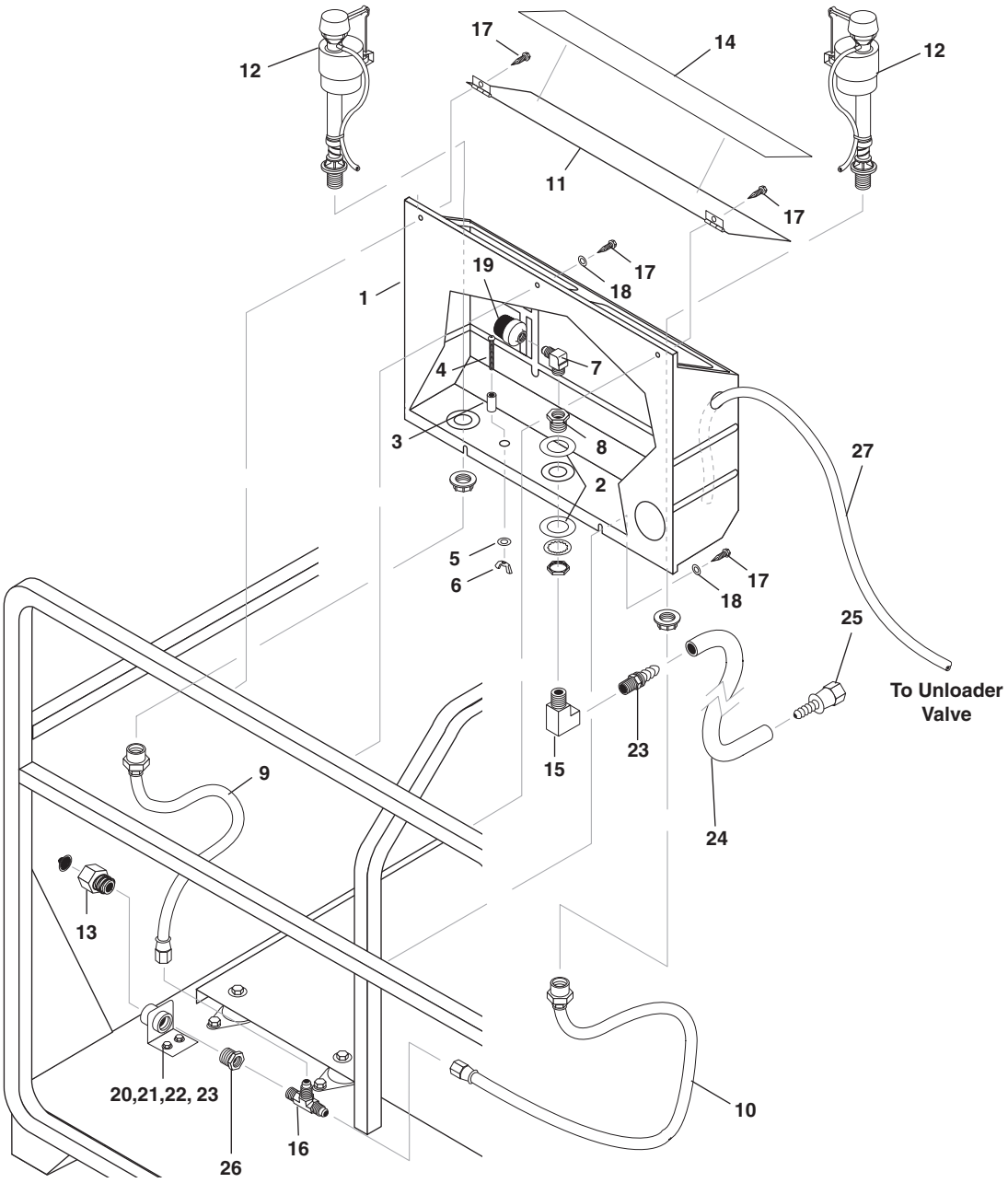


PUMP & UNLOADER EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	8.706-797.0	Nipple, 1/2" HEX	1
2	8.706-844.0	Tee 1/2" Female Pipe	1
3	8.706-917.0	Bushing, 1/2" x 3/8"	1
4	9.802-131.0	Elbow, 1/2" JIC x 1/2", 90°	1
5	9.802-132.0	Elbow, 3/4" JIC x 1/2", 90°	1
6	9.802-039.0	Elbow 1/2" JIC x 3/8" MPT	3
7	9.802-041.0	Elbow, 3/8" Stl Street, 45°	1
8	8.706-297.0	Bushing, 3/8" x 1/4" Steel	1
9	8.706-915.0	Bushing, 1/2" x 1/4" Brass	1
10	8.706-854.0	Tee, 1/4" Branch Male	1
11	8.706-958.0	Hose Barb, 1/4" Barb x 1/4" Pipe, 90°	2
12	6.390-126.0	Clamp, Hose, .46-.54 ST	2
13	8.912-508.0	Rail, Pump, 8-3 Diesel	1
14	9.802-807.0	Washer, 3/8" SAE Flat	6
15	8.718-961.0	Washer, M10 Split Ring Lock 8.8 Class Zinc Plated	4
16	8.904-887.0	Pump, Landa LH 5050/L, 5 @ 5000, 1650 RPM	1

ITEM	PART NO.	DESCRIPTION	QTY
17	9.802-870.0	Block, Unloader 3/8" x 3/8" 1.25, Steel	1
18	9.802-048.0	Swivel, 1/2" JIC Fem, 3/8" Male	1
19	9.802-037.0	Nipple, 1/2 JIC, 3/8" Fem	1
20	8.704-198.0	Valve, Safety Relief 6000 PSI	1
21	8.706-202.0	Elbow, Street, 1/4" x 3/8", Steel	1
22	8.715-461.0	Unloader 10.5 GPM @ 5100 PSI, (VB350)/4	1
23	9.802-728.0	Bolt, 3/8" x 2", NC HH	2
24	8.705-974.0	Nipple, 3/8" HEX Steel	1
25	8.716-135.0	Switch, Flow, 5000 PSI	1
26	9.802-259.0	Hose, 1/2", Push-On	20"
27	9.802-151.0	Swivel, 1/2" JIC FEM Push-On	2
28	8.918-236.0	Hose, 3/8" x 28", 6000 PSI, 2 Wire Pressure Loop	1
29	8.753-391.0	Elbow, 1/2" JIC x 3/8 NPT w/ 1/8" Hole	1
30	8.706-955.0	Hose Barb 1/4" Barb x 1/8 MPT	1
31	9.802-254.0	Hose 1/4" Push-On	72"

FLOAT TANK EXPLODED VIEW



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FLOAT TANK PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	9.802-084.0	Tank, Plastic Universal	1
2	8.719-039.0	Washer, 1-3/16" x 2-1/4", Steel Rubber	1
3	4-01240000	Tubing, 5/16" x 9/16" Rubber.	125 ft.
4	9.802-822.0	Screw, 5/16" - 18 x 1-1/2" SS, Button Socket	1
5	9.802-824.0	Washer, 5/16", SS	1
6	9.802-823.0	Nut, 5/16" - 18, Wing, SS	1
	9.802-106.0	Plug, Float Tank Assembly (Items 3-6)	1
7	9.802-131.0	Elbow, 1/2" JIC x 1/2", 90°	1
8	8.707-000.0	Connector, 1/2" Anchor	1
9	9.802-257.0	Hose, Inlet, 30" Supply Water	1
10	9.802-258.0	Hose, Inlet, 45" Supply Water	1
11	8.912-233.0	Lid and Hinges	1

ITEM	PART NO.	DESCRIPTION	QTY
12	9.802-185.0	Valve, Float Tank, Vertical	2
13	9.802-146.0	Swivel, 1/2" MP x 3/4" GHF w/Strainer	1
	8.707-055.0	Strainer, Inlet Garden Hose	1
14	8.900-832.0	Label, Stripe	1
15	8.706-829.0	Elbow, 1/2" Street, Brass	1
16	9.802-134.0	Tee, 1/2" x 1/2" JIC #51	1
17	9.802-799.0	Screw, #14 x 1", TEK, Black	4
18	9.804-082.0	Washer, 1/4", SAE, Black	2
19	8.707-061.0	Strainer, 1/2" Basket	1
20	9.802-961.0	Hose Connection Bracket	1
21	90-1007	Bolt, 5/16" x 1" NC HH	2
22	8.718-980.0 9.802-776.0	Washer 5/16" Flat SAE ▲ Nut, 5/16" ESNA, NC	2 2
23	8.707-020.0	Push-On, MPT 1/2" x 3/4" Barb	1
24	4-02110003	Hose, 5/8" Push-On per ft.	58"
25	9.802-152.0	Swivel, 3/4" SAE Fem. Push-On	1
26	8.706-925.0	Bushing, 3/4" x 1/2"	1
27	9.802-254.0	Hose, 1/4" Push-On	6

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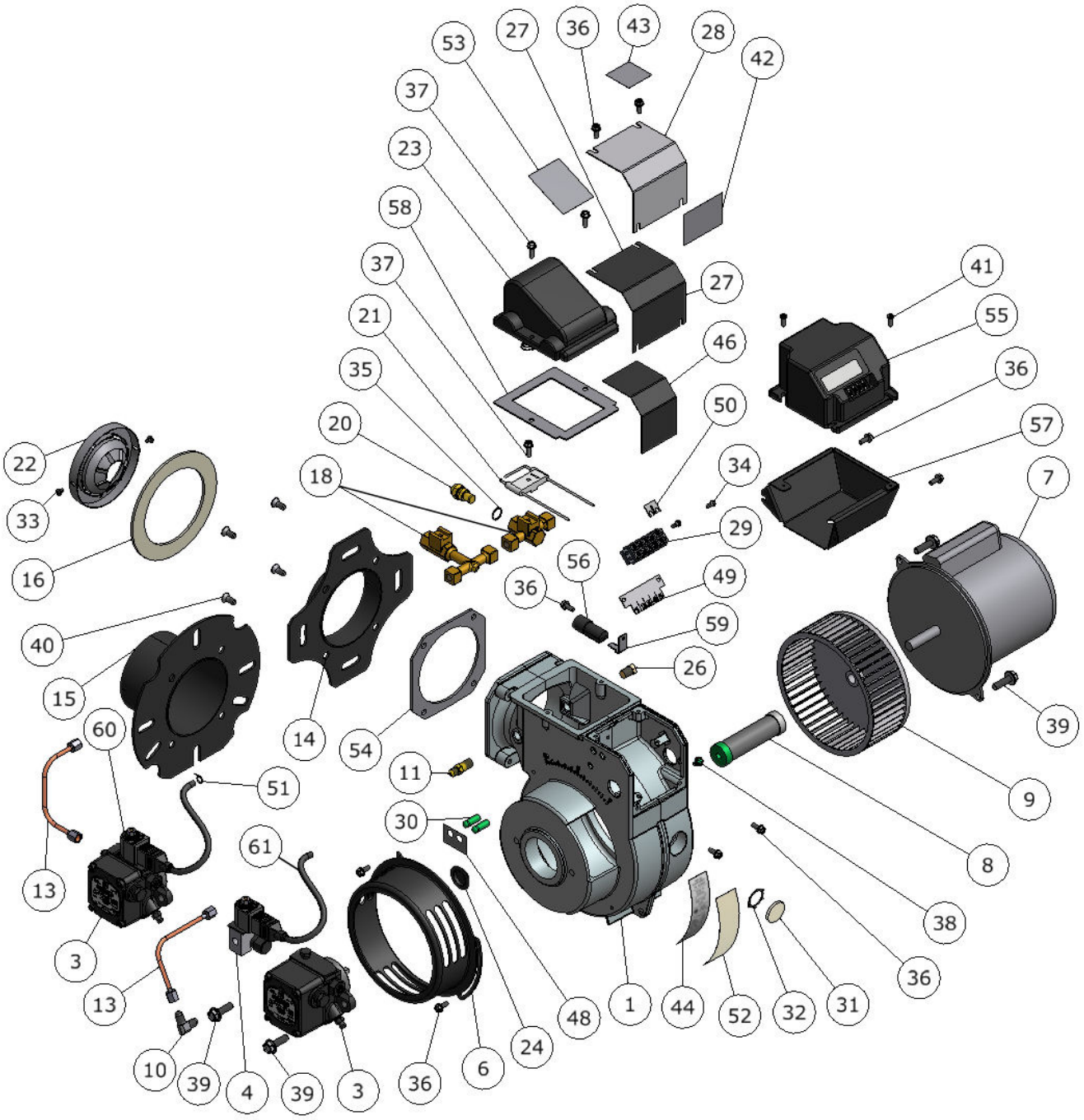
SUREFIRE BURNER "M/L" REPLACEMENT PARTS

For best performance specify genuine KNA replacement parts

8.920-645.0



SUREFIRE "M/L" REPLACEMENT PARTS

For best performance specify genuine KNA replacement parts

Item #	Part #	Description	Qty
1	8.752-865.0	BURNER HOUSING ASSEMBLY-M/L	1
3	8.700-758.0	FUEL PUMP, SUNTEC A2VA-3106 12-24V SOL	1
3	8.700-759.0	FUEL PUMP, SUNTEC A2VA-3106 120V SOL	1
3	8.700-760.0	FUEL PUMP, SUNTEC A2VA-3106 230V SOL	1
3	8.752-923.0	FUEL PUMP, SUNTEC A2YA-7916	1
4	8.752-924.0	SOLENOID VALVE, SUNTEC R642NL, 115V	1
4	8.752-925.0	SOLENOID VALVE, SUNTEC R753NL, 220V	1
4	8.753-030.0	SOLENOID VALVE, SUNTEC R261NL, 12/24V	1
6	8.752-919.0	AIR BAND M/L	1
7	8.752-930.0	MOTOR, 1/4 HP 115V W/CAP NIDEC	1
7	8.752-931.0	MOTOR, 1/4 HP 230V W/CAP NIDEC	1
7	8.752-933.0	MOTOR, 1/5 HP 13.5VDC AMETEK N1CPM-156	1
7	8.752-932.0	MOTOR, 1/7 HP 115V EMERSON K41	1
7	8.753-054.0	MOTOR, 1/7 HP 230V EMERSON K41	1
8	8.753-061.0	COUPLING, FLEX, 1/2" x 5/16" x 3-7/8" L	1
8	8.753-062.0	COUPLING, FLEX, 5/16" x 5/16" x 3-7/8" L	1
9	8.752-928.0	FAN, 6.25 x 4.25 x .50 BORE	1
9	8.752-929.0	FAN, 6.25 x 4.25 x .313 BORE	1
10	8.752-920.0	ELBOW, 37 DEG FLARE X 1/8" NPT 90 DEG	1
11	8.750-547.0	CONNECTOR, 37 DEG FLARE X 1/8" NPT, LONG	1
13	8.752-934.0	FUEL LINE ASSEMBLY, M	1
13	8.753-055.0	FUEL LINE ASSEMBLY, L	1
14	8.752-034.0	FLANGE 1" TUBE ASSY, BURNER	1
15	8.752-035.0	FLANGE 3" TUBE ASSY, BURNER	1
16	8.750-539.0	GASKET, FLANGE	1
18	8.750-526.0	GUN, ELECTRODE / NOZZLE, 3"	1
19	8.750-525.0	GUN, ELECTRODE / NOZZLE, 1"	1
20	Varies	FUEL NOZZLE	1
21	8.750-778.0	ELECTRODE, IGNITION AC	1
21	8.751-342.0	ELECTRODE, IGNITION DC	1
22	8.750-781.0	CONE, AIR F22	1
22	8.752-935.0	CONE, AIR F310	1
23	8.919-114.0	IGNITOR, BURNER 120V	1
23	8.919-115.0	IGNITOR, BURNER 230V	1
23	8.919-116.0	IGNITOR, BURNER 12VDC	1
24	8.706-745.0	PLUG, HOLE 0.812 PLASTIC	1
26	8.751-134.0	PLUG, 1/8" NPT X HEX SHOULDER	1
27	8.752-922.0	GASKET, JUNCTION BOX ML	1
28	8.920-654.0	COVER, JUNCTION BOX ML	1
29	8.750-116.0	BLOCK, TERMINAL, 5 POLE	1
30	8.750-817.0	LIGHT, INDICATOR, GREEN 14V	1
30	8.753-257.0	LIGHT, INDICATOR, CLEAR 28V	1
30	8.753-258.0	LIGHT, INDICATOR, AMBER 125V	1
30	8.753-259.0	LIGHT, INDICATOR, BLUE 250V	1
31	8.750-784.0	SITE GLASS	1
32	8.750-785.0	RING, PUSH ON INTERNAL	1
33	8.733-001.0	SCREW, 8 x 1/4" HI LOW THREAD CUT	2
34	8.718-762.0	SCREW, 8-32 X 1/2", M PH RDH PL	4
35	8.752-137.0	WASHER, FUEL NOZZLE, COPPER	1
36	8.718-810.0	SCREW, 10/32 X 1/2" WHIZ LOC FLANGE	9
37	8.750-770.0	SCREW, 10/32 x 5/8", WHIZ LOC FLANGE	3
38	8.750-816.0	SCREW, 10/32 X 1/4" GROUNDING	1
39	9.802-756.0	SCREW, 5/16" x 1", WHIZ LOC FLANGE	4
40	8.750-771.0	SCREW, 1/4-20 X 1/2", PHIL FHMS	4
41	9.802-750.0	SCREW, 8-32 X 1/2 M TPG PH PNH, BLACK	1
42	-	LABEL, BRAND NAME	1
43	9.801-268.0	LABEL, DISCONNECT POWER SUPPLY	1
44	-	LABEL, SERIAL PLATE	1
46	9.807-339.0	LABEL, WIRING DIAGRAM, BURNER 115V-115V	1
46	9.807-340.0	LABEL, WIRING DIAGRAM, BURNER 230V-230V	1
46	9.807-341.0	LABEL, WIRING DIAGRAM, BURNER 230V-115V	1
46	9.807-342.0	LABEL, WIRING DIAGRAM, BURNER 115V-24V	1
46	9.807-343.0	LABEL, WIRING DIAGRAM, BURNER 230V-24V	1
46	9.807-344.0	LABEL, WIRING DIAGRAM, BURNER 12VDC	1
46	9.807-551.0	LABEL, WIRING, BURNER 115V PRIMARY	1`
46	9.807-552.0	LABEL, WIRING, BURNER 230V PRIMARY	1
48	9.801-273.0	LABEL, BURNER LIGHTS	1
49	8.919-105.0	PLATE, TERMINAL BLOCK NUMBERS	1
50	8.716-451.0	TERMINAL, JUMPER SPADE	1
51	9.802-510.0	CABLE, TIE, 4" BLACK	4
52	9.807-348.0	LABEL, CLEAR MYLAR, 1.125 x 4.50	1
53	9.807-345.0	LABEL, IGNITER 120V	1
53	9.807-346.0	LABEL, IGNITER 230V	1
53	9.807-347.0	LABEL, IGNITER 12VDC	1
54	8.751-354.0	GASKET, BURNER TUBE	1
55	8.753-100.0	PRIMARY CONTROL, HONEYWELL R7284U	1
56	8.753-101.0	CAD CELL FLAME DETECTOR, C554A	1
57	8.920-656.0	JUNCTION BOX, KNA BURNER ML	1
58	8.753-036.0	GASKET, IGNITER	1
59	8.921-214.0	BRACKET, FLAME SENSOR	1
60	9.802-640.0	COIL, OIL VALVE 120V, W/O CORDSET	1
60	9.802-641.0	COIL, OIL VALVE 230V W/O CORDSET	1
60	8.700-794.0	COIL, OIL VLAVE 12/24V W/O CORDSET	1
61	9.804-072.0	CONDUIT, WIRE COVER	1

BURNER SPECIFICATIONS

Beckett Burner

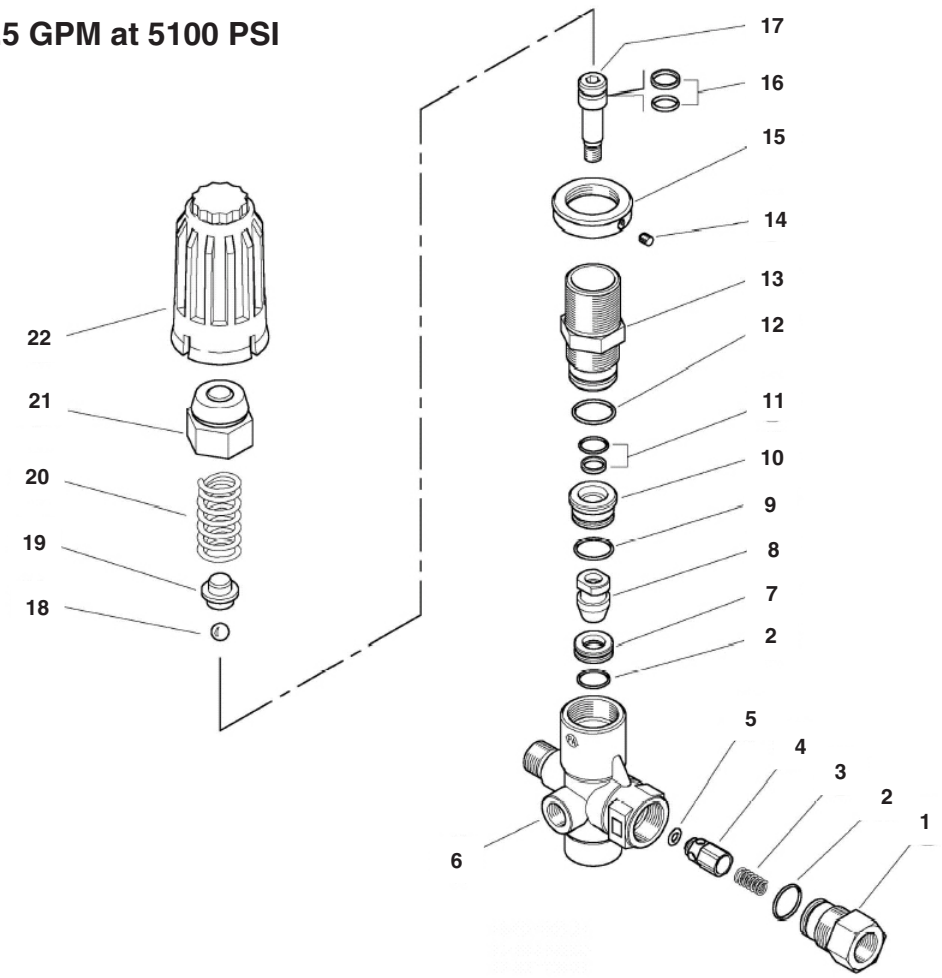
Model No.	Burner Assy No.	Fuel Nozzle	Transformer	Burner Motor	Fuel/Pump Solenoid/Cord	Fuel Solenoid Coil	Electrode
PGHW5-5000	9.802-556.0	8.717-366.0	7-51824	9.803-056.0	7-21844U	7-21755U	8.740-110.0

LANDA Surefire Burner

Model No.	Burner Assy No.	Fuel Nozzle	Transformer	Burner Motor	Fuel/Pump Solenoid/Cord	Fuel Solenoid Coil	Electrode
PGHW5-5000	8.920-645.0	8.717-366.0	8.919-114.0	8.752-930.0	8.700-758.0	9.802-640.0	8.750-778.0

VB UNLOADER EXPLODED VIEW

5-3014
VB350/4 10.5 GPM at 5100 PSI



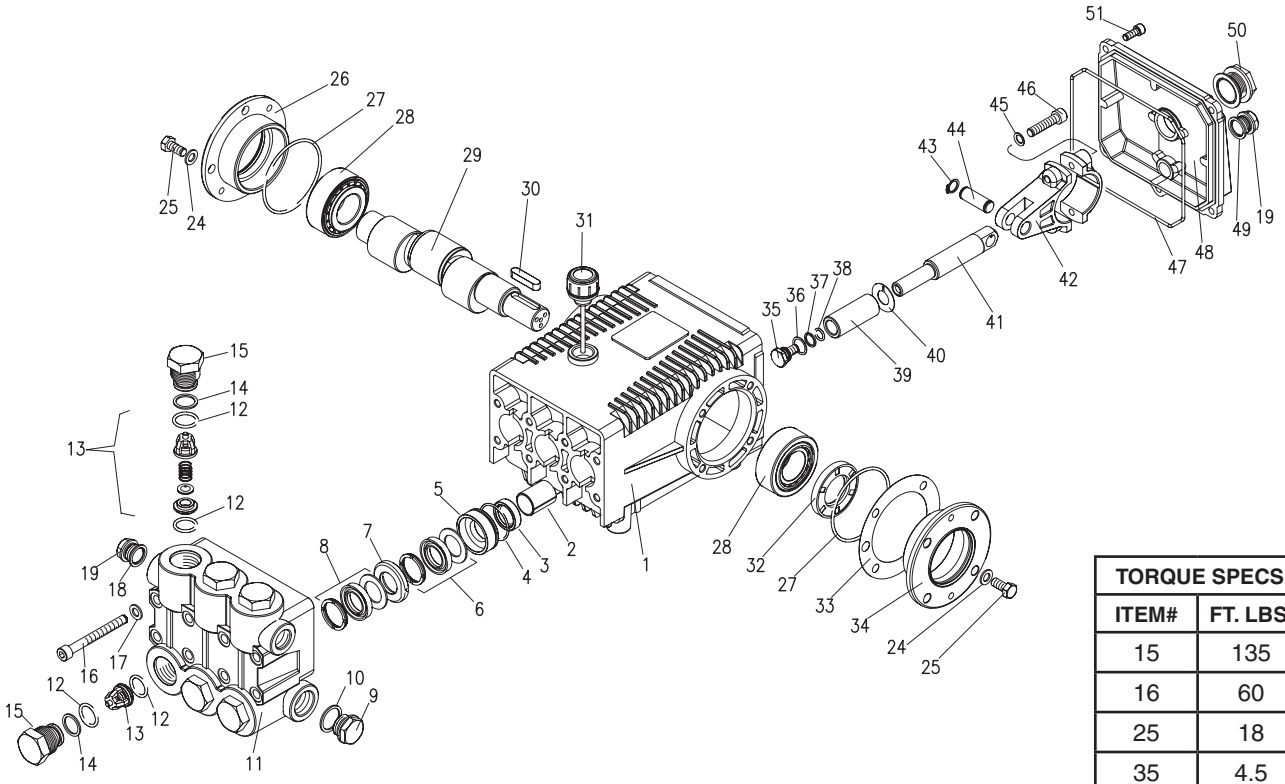
VB UNLOADER EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	60.1811.31	3/8 Bsp F Nipple	1
2	10.3066.01*	O-Ring, 1.78 x 15.6 mm	2
3	60.0053.51	Spring	1
4	60.0052.51	Sst Check Valve	1
5	10.3213.08*	O-Ring, 3 x 6mm	1
6	60.1725.35	VB280-350 Brass Body	1
7	60.1809.51*	Seat	1
8	60.1808.51*	M 8 Shutter	1
9	10.3068.01*	O-Ring, 1.78 x 17.17 mm	1
10	60.1810.31	Spacer	1
11	60.0979.24*	VB280-350 Val. Pist. Seal Repair Set	1
12	10.3072.01*	O-Ring, 1.78 x 20.35 mm	1
13	60.0973.31 60.1805.31	Piston Housing (60.1600.00) Piston Housing (60.1700.00)	1 1
14	16.2100.00	M 4 x 4 mm Dowel	1
15	60.1728.31	Lock Nut	1

ITEM	PART NO.	DESCRIPTION	QTY
16	60.0978.24*	VB280-350 Val. Pist. Seal Repair Set	1
17	60.1806.51	M8 Piston	1
18	14.7443.10*	Sst 11/32" Ball	1
19	60.1813.31	Spring Guide	1
20	60.0975.61 60-1812.61	4.2 mm Spring (60.1600.00) 4.5 x 47 mm Spring (60.1700.00)	1 1
21	60.1727.31	Brass Cap	1
22	60.1726.84 60.1729.84	VB280 Black Plastic Knob (60.1600.00) VB350.4 Red Plastic Knob (60.1700.00)	1 1
*Kit :			
K1	60.1615.24	VB280-350.4 Spare Parts Kit Pcs. 11 x 1	

LH SERIES PUMP EXPLODED VIEW

8.904-887.0 LH5050-L



TORQUE SPECS	
ITEM#	FT. LBS.
15	135
16	60
25	18
35	4.5
46	30
51	7.6

LH SERIES PUMP EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	9.803-163.0	Crankcase	1
2	9.803-195.0	Plunger Guide	3
3*	See Kit Info	Plunger Oil Seal	3
4*	See Kit Info	O-Ring Ø1.78 x 37.82	3
5*	See Kit Info	Pressure Ring 18mm	3
6*	See Kit Info	"U" Seal, dia 18 x 26mm	3
7*	See Kit Info	Support Ring 18mm	3
8*	See Kit Info	"U" Seal, dia. 18 x 28mm	3
9	9.802-926.0	Brass Plug, 1/2	1
10	9.803-199.0	Copper Washer 1/2	1
11	8.717-516.0	Manifold Housing	1
12*	See Kit Info	O-Ring Ø2.62 x 17.13	12
13*	See Kit Info	Valve Assembly	6
14*	See Kit Info	Teflon Ring	6
15	9.803-292.0	Valve Plug	6
16	9.802-942.0	Manifold Stud Bolt	8
17	9.802-890.0	Lock Washer	8
18	9.803-198.0	Copper Washer 3/8	1

ITEM	PART NO.	DESCRIPTION	QTY
19	9.802-925.0	Brass Plug 3/8	2
24	9.802-884.0	Washer	8
25	9.802-944.0	Hexagonal Screw	8
26	9.804-501.0	Closed Bearing Housing	1
27	9.803-186.0	"O" Ring Ø2.62 x 71.12	2
28	9.804-502.0	Roller Bearing	2
29	9.803-289.0	Crankshaft	1
30	9.803-293.0	Crankshaft Key	1
31	9.802-923.0	Oil Dip Stick	1
32	9.803-139.0	Crankshaft Seal	1
33	9.803-177.0	Shim	2
34	9.804-503.0	Bearing Housing	1
35*	See Kit Info	Plunger Bolt	3
36*	See Kit Info	Copper Spacer	3
37*	See Kit Info	"O" Ring Ø1.78 x 7.66	3
38*	See Kit Info	Teflon Ring	3
39*	See Kit Info	Plunger 18mm	3
40*	See Kit Info	Copper Spacer	3

LH SERIES PUMP EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
41	9.803-294.0	Plunger Rod	3
42	9.803-157.0	Connecting Rod	3
43	9.802-912.0	Snap Ring	6
44	9.802-915.0	Connecting Rod Pin	3
45	9.802-889.0	Spring Washer	6
46	9.802-937.0	Connecting Rod Screw	6
47	9.803-194.0	"O" Ring Ø2.62 x 152.07	1
48	9.803-166.0	Crankcase Cover	1
49	9.803-197.0	Gasket, G3/8	1
50	9.803-202.0	Sight Glass, G3/4	1
51	9.802-939.0	Cover Screw	5

* Part Available in Kit (See Below)

KIT NUMBERS	9.804-492.0	9.804-493.0	9.802-629.0	9.802-604.0	9.802-606.0
KIT DESCRIPTION	Plunger Seal 18 mm	Seal Packing 18 mm	Plunger 18 mm	Complete Valve	Plunger Oil Seals
ITEMS NUMBERS INCLUDED	4, 6, 8	4, 5, 6, 7, 8	35, 36, 37, 38, 39, 40	12, 13, 14	3
NUMBER OF CYLINDERS KIT WILL SERVICE	3	1	1	6	3

LANDA LIMITED NEW PRODUCT WARRANTY
PRESSURE WASHERS

WHAT THIS WARRANTY COVERS

All LANDA pressure washers are warranted by LANDA to the original purchaser to be free from defects in materials and workmanship under normal use, for the periods specified below. This Limited Warranty is subject to the exclusions shown below, is calculated from the date of the original purchase, and applies to the original components only. Any parts replaced under this warranty will assume the remainder of the part's warranty period.

SEVEN YEAR PARTS AND ONE YEAR LABOR WARRANTY:

Components manufactured by LANDA, such as frames, handles, top and bottom wraps, float tanks, fuel tanks, belt guards, and internal components on the oil-end of Landa manufactured pumps. General, AR, Liberty, Comet and swash and wobble plate pumps have a one year warranty. Heating coils have a five year warranty from date of original machine purchase.

ONE YEAR PARTS AND ONE YEAR LABOR WARRANTY:

All other components, excluding normal wear items as described below, will be warranted for one year on parts and labor. Parts and labor warranty on these parts will be for one year regardless of the duration of the original component manufacturer's part warranty.

WARRANTY PROVIDED BY OTHER MANUFACTURERS:

Motors, generators, and engines, which are warranted by their respective manufacturers, are serviced through these manufacturers' local authorized service centers. LANDA is not authorized and has no responsibility to provide warranty service for such components.

WHAT THIS WARRANTY DOES NOT COVER

This warranty does not cover the following items:

1. Normal wear items, such as nozzles, spray guns, discharge hoses, wands, quick couplers, seals, filters, gaskets, O-rings, packings, pistons, pump valve assemblies, strainers, belts, brushes, rupture disks, fuses, pump protectors.
2. Damage or malfunctions resulting from accidents, abuse, modifications, alterations, incorrect installation, improper servicing, failure to follow manufacturer's maintenance instructions, or use of the equipment beyond its stated usage specifications as contained in the operator's manual.
3. Damage due to freezing, chemical deterioration, scale build up, rust, corrosion, or thermal expansion.
4. Damage to components from fluctuations in electrical or water supply.
5. Normal maintenance service, including adjustments, fuel system cleaning, and clearing of obstructions.
6. Transportation to service center, field labor charges, or freight damage.

WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE

While not required for warranty service, we request that you register your LANDA pressure washer by returning the completed registration card. In order to obtain warranty service on items warranted by LANDA, you must return the product to your Authorized LANDA Dealer, freight prepaid, with proof of purchase, within the applicable warranty period. If the product is permanently installed, you must notify your Authorized LANDA Dealer of the defect. Your Authorized LANDA Dealer will file a claim with Landa, who must subsequently verify the defect. In most cases, the part must be returned to LANDA freight prepaid with the claim. For warranty service on components warranted by other manufacturer's, your Authorized LANDA Dealer can help you obtain warranty service through these manufacturers' local authorized service centers.

LIMITATION OF LIABILITY

LANDA'S liability for special, incidental, or consequential damages is expressly disclaimed. In no event shall LANDA'S liability exceed the purchase price of the product in question. LANDA makes every effort to ensure that all illustrations and specifications are correct, however, these do not imply a warranty that the product is merchantable or fit for a particular purpose, or that the product will actually conform to the illustrations and specifications. Our obligation under this warranty is expressly limited at our option to the replacement or repair at a service facility or factory designated by us, of such part or parts as inspection shall disclose to have been defective. **THE WARRANTY CONTAINED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY.** LANDA does not authorize any other party, including authorized LANDA Dealers, to make any representation or promise on behalf of LANDA, or to modify the terms, conditions, or limitations in any way. It is the buyer's responsibility to ensure that the installation and use of LANDA products conforms to local codes. While LANDA attempts to assure that its products meet national codes, it cannot be responsible for how the customer chooses to use or install the product. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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